THE QUARTERLY REVIEW OF COMMERCE

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WAR FINANCE IN CANADA — 1942

E. E. REILLY

It is not easy to appreciate the magnitude of Canada's war expenditures. During the depression years of the early 1930's, the National Income of Canada was less than three billion dollars a year. Right now the Government of the Dominion is spending at the rate of about four billion dollars a year—over a billion dollars more than the total income of the country ten years ago. About 85% of this expenditure is for war purposes. The money cost of the war to the Federal Government is greater than the total money income of the people of Canada during any of the depression years. The cost is growing rapidly and although it is now ten times that of 1918, it is not nearly at its peak. Modern war produces economic disturbances, some of which are apparent to any observer. The effects of the purely financial factors are not always so readily discerned, and the results to be expected and the treatment to be applied are a fruitful source of controversy. We are in the midst of a titanic war—let us leave the controversial points for posterity.

There is one clear cut issue about which there can be no mistake, no controversy, and it is an issue which will force itself upon us more and more with every day of war. Currently, the money income of the people of Canada is about seven billion dollars. Currently, our real income (the flow of goods and services at present prices) is about three billion dollars. The money income is still rapidly rising while the real income is falling as fewer resources remain available for the production of consumer goods and services.

The first issue arises clearly—as a people we have the largest money income in our history and a diminishing flow of goods on which to spend it. It matters not how much money the people of Canada attempt to spend on consumption goods, they will only consume what there is. At existing prices, half our money income will do that.

The second point is a corollary of the first. Would it not be possible to take from the people in taxes an amount equal to the extra expenditures of the government for war purposes? Is it not true that personal incomes in total are increased by just this amount? Would this not be a painless way of paying for the war as you go? The answers must be yes! but that yes must be modified. It is not considered practicable to go all the way. Undue irregularities and actual suffering would result if sufficient taxes were collected to cover the entire costs of the war as they are incurred, for individual circumstances vary; neither individuals nor families share equally in this increased money income and the rate

of change in war costs is so rapid that tax burdens cannot be adjusted at an equal pace.

The third point follows from the first two, viz., that supplementary methods are needed to take care of the financial problems of modern war; that a tax system even though rapidly expanding must be supported by a system of voluntary savings.

The logic of the situation, as well as the fiscal necessity of saving and loaning for war purposes should be impressed upon every citizen of Canada. One may ask "how can I keep up my scale of living?" The answer should be obvious—you are not going to keep it up. Day by day until the war is ended the scale of living is going down. Never forget that by European standards we are living well and by these standards shall live well for years yet. Never forget that if we voluntarily and continuously reduce our consumption, if we co-operate to the full in providing funds for the war, we shall give up less in the long run, we shall win an earlier victory and a more satisfactory and prosperous peace.

As citizens of Canada we have everything to gain from saving now. Plan to loan more of your income than you ever thought possible.

THE QUARTERLY REVIEW OF COMMERCE

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REFUGEES IN CANADA

SENATOR CAIRINE WILSON

Senator Dominion of Canada, Ottawa; Chairman of the Canadian National Committee on Refugees.

WE in Canada have read much during recent years of the cruel fate of the victims of Totalitarian persecution, but, while some were eager to play the Good Samaritan and admit them to our large and sparsely settled country, others, who had learned too well the doctrine of national selfishness, urged that we express sorrow for the suffering, but follow the example of the Priest and the Levite. If we had only studied our history books more carefully, our attitude would have been different, for those, who are now humbly asking admission, possess assets far more valuable than any gift of gold or precious stones.

From the time of William the Conqueror, Britain has—with few exceptions—held her door wide open to refugees and has profited by it. Great Britain for centuries has held the foremost place in the manufacture of cloth, but it was the Flemish Refugees who, with their brains and hands, brought the art of weaving. We speak and think with veneration of the Elizabethan age, but to the names of Shakespeare, Drake, Sir Walter Raleigh and others, emblazoned on the pages of that era, we may add the silk weavers, the makers of cutlery, clocks, hats, pottery, the weavers of fine fabrics and lace — people who, driven by persecution from their own country, enriched the land of their adoption. In 1598 came the Edict of Nantes and the tide of refugees diminished, but 1685 brought renewed persecution and the Huguenots, escaping with only their lives, arrived in a flood and were welcomed to Britain. The record shows that these poor people, with empty pockets, empty stomachs and empty hands, had a large share in the foundation of world trade which has made that tight little island so great.

Down through the ages, those who have been forced to go into exile for a belief have moral qualities which other peoples, less tried, should be eager to absorb. The record of British history shows Flemings, Jews, Huguenots, royalists, democrats and freedom seekers finding sanctuary in England from the earliest times to the Industrial Revolution. All contributed in no small degree in building up the prosperity and strength of their adopted land, despite the protests of those who feared the competition of these "foreigners" and despite suggestions that alien blood might overwhelm the native stock.

Until 1931, natives of Europe who were courageous enough to cross the sea to establish new homes were readily admitted to Canada, and many nationalities contributed, with the original French and Anglo-Saxon colonists, to the upbuilding of our country. With the depression came the haunting fear that newcomers would take employment from those already here, and the Order-in-Council was passed which practically closed the door to immigrants from Continental Europe. According to this Order-in-Council, there are only three classes eligible for admission to Canada:

1. First degree relatives of persons already in Canada
2. Bona fide agricultural settlers
3. Persons possessing substantial capital

and, despite the appalling persecution under Totalitarian regimes, only a very limited number of applicants were admitted.

Amongst the few was Louis Fischl, glove maker from Czechoslovakia, whose firm had been making gloves near Carlsbad for 100 years. Mr. Fischl, whose home was in the disputed area, lost everything by the Munich Agreement, and had barely time to make his way with his wife and two children to the nearest airport. Mr. Fischl had been making annual shipments to Canada to the value of $350,000 and, although friends advised him to re-establish his business in Belgium, France or Great Britain, some wiser instinct counselled Fischl to turn to Canada, which in his business trips he had learned to love.

In February, 1939, Fischl arrived here and secured the permit for the entry of his family and a few key men and women in the Czech glove industry—now refugees in Britain or France and who, like himself, had lost their life's work and savings. The only assets Louis Fischl, famous glove manufacturer of Czechoslovakia, possessed at 50 years of age were his own skill and that of his wife, who is a glove designer and style

expert, and the skills of a few refugees whom he had managed to gather about him.

At Prescott, on the St. Lawrence, the Fischl glove factory commenced operations in August, 1939, in a factory building which had stood empty for two years. Mr. Fischl had bought 1,500 acres of poor neglected farm land and had from this set aside a farm for himself and for those Czech farmers for whom he had secured permits. Prescott, which has had a flourishing past, but at best a doubtful future, saw the possibility of renewed life, of which gloves would be only the beginning. Since its establishment only two and a half years ago, the glove industry has made steady progress and Mr. Fischl has visions of a large goat population, for the factory needs the skins, and the milk makes the popular Gruyère cheese of Switzerland and the St. Marcelin, better known in France. The Mayor of Prescott told me that, while other Ontario towns complained of unemployment, Prescott had none, and for this gave the credit to Louis Fischl. Canadians in this factory are acquiring an appreciation of fine glove-making, as well as good wages, and on a humble foundation, Fischl may have now established in Canada an industry which will some day rival that which he was forced to abandon in his homeland.

We have thought of Polish ham as a delicacy, which only those privileged to travel to Europe in happier days could taste, and are surprised today to learn that hams are being cured in this manner in our own country. For more than 400 years, the Mendell family carried on their business in Recklinghauser in Westphalia, Germany, and the closely guarded secret process was revealed from father to son for many generations. Frederick Solomon Mendell grew up and entered his father's plant and in the traditional manner learned all there was to know about pigs, steers and livestock and how to use every piece of the animal. Finally the great day came when his father took him into his private room and revealed to him the special cure of ham, which was not in writing, but passed orally from father to son. The father, Robert Mendell, died in 1911 and the son, Frederick Solomon, showed almost at once that he was of the new school. The business of the plant grew so rapidly that extensions had to be constructed to keep abreast of the ever-increasing production. Even the war of 1914-18 brought only a temporary setback to Mendell's business, for in 1920 he decided to form a partnership with Henry Poels, whom he had met in Antwerp. Packing plants were established the same year in centres of agrarian Poland and in the Free City of Danzig. These plants specialized mainly in

the export of Wiltshire sides to England and in the canning of Mr. Mendell's own "Polish Ham"—as it was now named, for the bulk came from that country. This ham was especially exported to the United States, where it was, and still is, in great demand. Everything appeared to flourish, and Mr. Mendell's string of race horses brought credit to the owner on the most famous tracks in Europe. The shadow of the Swastika, however, was beginning to fall across Europe, and in 1932 Mr. Mendell knew what to expect and with his family hurriedly left Recklinghauser. The firm established for 500 years fell completely into the hands of the Nazis. The Mendell family moved about Europe until Mr. Mendell, convinced now that war was inevitable, took all the money that could be salvaged and from Cherbourg set forth on the Queen Mary for the New World.

He recalled that a friend, a London stockbroker, had once told him of Western Canada and the great possibilities there for establishing and operating packing plants. After careful enquiries and investigation of the livestock of the country, Mr. Mendell decided that Saskatoon would be his new home. The plant was opened on June 15th, 1940, and this Spring a new $150,000 addition will be completed.

Everything is conducted with the minimum of handling, but still Mr. Mendell seeks always to improve methods. The pigs and later the sides move along ceiling rails at a well-timed pace and the live pig is transformed in a minimum of time into well-cured Wiltshire sides, ready for export to England and the United States, and into all the by-products, which find a market locally. The pride of the owner, however, is the particular section where workmen under special direction are carrying on the tradition of the Mendell family—curing, cooking and packing the "Polish Hams". So great is the United States demand for this finely-cured ham that none is being sold in Canada as yet, for none is available. Mr. Mendell, however, expects to enlarge his operations to take care of this country's trade in the not too distant future. Already he is doing much to satisfy the constantly growing demand for Canadian bacon from beleaguered Britain.

The forest wealth of British Columbia is so wonderful that little attention has been paid to the hemlock, which is everywhere plentiful, and it remained for a Czech refugee, Leon Koerner, to realize the commercial possibilities of this tree. Hemlock is a moist wood; instead of holding resin between its cells, it holds water and, when exported from Canada improperly dried, reached its destination in such poor state that British Columbia hemlock had a bad reputation in world

markets. Mr. Koerner recalls, "I have seen it on the docks of London, when I have been there on business. I remember being surprised that wood with so good a grain should be in such poor condition." With other Czech lumbermen, he knew how beautiful and useful the white woods of Europe—inferior as they are to Canadian hemlock—could be made with proper treatment.

Leon Koerner, with his brothers Otto and Walter, has founded the Alaska Pine Company Limited on the banks of the Fraser River, at New Westminster, and has introduced new methods, not only into the treatment of lumber, but also into the whole business structure, and most important of all into the phase of employer-employee relations.

The Company does its own grading and the partners have decided that it pays to be meticulous and to keep the plant spotlessly clean and free from damp. The Alaska Pine Company tries to ensure that the hemlock is used only for interior work, for if exposed to wet it will quickly deteriorate, while in its proper place it will keep in good condition for a hundred years.

In Czechoslovakia, the Koerners had been accustomed to compulsory health insurance, compulsory unemployment insurance and other Government-imposed measures. They decided upon these plans in New Westminster and made an arrangement with two doctors by which they will be on call for all workmen at all times, and not only for them, but for their families as well. Sick benefits include cost of operations, when these are needed, specialist fees and hospital costs for one month—all paid by the firm. Free group life insurance is also provided from $1,000 to $2,000, depending on the worker's status. The firm has now 304 employees, of whom all but six are Canadians—the six being old Czech employees—and all new recruits are required to submit to a free medical examination. The firm is trying other new ideas; it is taking young men of good education, as it did in Czechoslovakia, and is training them from the ground up in the mill, as the brothers themselves were trained. Naturally, the war has made some inroads in the plant personnel, and some of the best hands have gone to the Forestry Corps, where they are likely to prove most useful.

A more amazing story and one destined to play an important part in Canadian war production is that of the young man, Thomas Bata, the eighth generation in an unbroken line of shoemakers. Three centuries ago, Lukas Bata of Zlin started shoemaking, but it was Thomas Bata, father of the present Thomas Bata, who revolutionized

the business. He it was who solved the problem which has afflicted mankind since the Industrial Revolution, for Thomas Bata has made machinery the servant rather than the master of the worker. By the adoption of up-to-date methods and new and more efficient machinery, production in the Bata plant at Zlin increased tremendously. The average price of a pair of shoes fell from 220 Czech crowns to 34 crowns, and at the same time the weekly wages of the workers rose from 166 crowns to 525 crowns. The number of workers in the Bata factories at Zlin grew from 50 to 22,050, while the daily hours of labour were reduced. As Bata succeeded, he divided the profit between the people who needed shoes by selling more cheaply, and the men and women who made the shoes by increasing their pay.

The son, Thomas Bata, arrived in Ottawa in April 1939 and the accomplishment since has been one of the miracles of these strenuous war years. In July, Bata took over a derelict paper mill at Frankford, in the Trent Valley, and with 82 Czech refugees proceeded to launch his industry. There were 30 shoemakers, 20 engineers and 30 office and export experts. This young man has set out to do what his father did before him, for the principles upon which his father founded the greatest shoe industry of all time, he had learned from infancy.

The Frankford plant was used to train workers until a new and fully modern plant could be built. Construction on the new plant at Batawa began in September 1939 and was completed in March 1940. The Frankford plant became the machine tool workshop and was tooled to turn out aeroplane parts and sections for army trucks in 1940. Bata made gauges for the Department of Munitions and Supply, and later small arms, weighing and gauging machines for arsenals of Canada, South Africa and India.

In June 1941 the first large order was put through and the mill began turning out parts for gun mountings. The first naval gun mount to be made in Canada was completed in this new factory. The derelict paper mill at Frankford has thus become a bright spot for the Department of Munitions and Supply.

Not far away, in the Trent Valley, but miles from any other village, stands a new ultra-modern five-storey factory, while a few hundred yards to the west fifty houses border the main street of the new-born Village of Batawa. Here, in place of the generally accepted grime and dreary outlook commonly associated with factories, the workman may look out upon a fair prospect of woods, stream and hill. The new

factory had been in operation only a few months, and the whole enterprise just a little over a year, when this report was made:

The Bata Company had invested $980,000 in this country, and the value of production — all new to Canada — was $1,250,000. Wages totalling $11,000 per week were being made. Leather is the chief raw material for shoes and the Canadian farmer had already sold $1,200,000 worth of hides, as well as many other products. In the first year 376,459 pairs of shoes were produced and of these 96,559 were exported, which represents a substantial addition to our foreign credit, so essential for our greedy war machine.

With many another new and slightly different enterprise, Bata and his small group of refugees were the centre of all sorts of gossip. The favourite point of attack was that they were Nazi spies—although this had been satisfactorily disproved by very strict investigation; next, that their labour methods were questionable, for the Bata employees are not organized.

The Company owns the houses and rents them at the absolute cost —for from $3.00 to $4.00 per week, which represents a tremendous real increase in wages to the workers who live in them. Thomas Bata himself lives in a house in no way different to the others. The Company operates a cafeteria, which serves full course dinners for from twenty-five to thirty cents and a lunch for half that amount. The senior Bata had a passionate belief in the right of the worker to partnership in industry and this is reflected in the elaborate cost system. The making of shoes is divided into various operations; as the shoes pass along the assembly line, each group knows exactly how much the shoe has already cost, and how much this particular operation should add to this; if it is lowered, a larger profit is shown for the Company, which is divided with the group, and thus, the better the work, the higher the wages.

The Hitler tyranny has given Canada a wonderful opportunity, and here in the heart of Ontario a derelict paper mill is the centre of an industry; and a valley, which a short time ago possessed only trees, rocks and some meadow-land, now contains a model factory, half a hundred homes and 500 men and women with good jobs.

We have heard much of the sufferings of Poland and are filled with admiration for the heroism and endurance of her people, but, while many know of the exploits of Polish airmen, soldiers and sailors, few are aware of what Polish engineers are now doing in Canada. At the

plant of de Haviland Aircraft of Canada, the chief designer, W. J. Jakimuik, was for ten years Chief Engineer of the National Aircraft Factory in Warsaw, Poland. After the invasion of Poland, in 1939, Mr. Jakimuik joined the French National Aeronautical Corporation, but the fall of France brought him to Canada and to the de Haviland Aircraft. Mr. Jakimuik has been responsible for the design and construction of eight military and civil aeroplanes, of which four are well known, and one, the PZ-24, was used by the Greeks in the present war against the Italians. In the March number of Canadian aviation the advantage of gliders as a means of transport for troops, freight and passengers is ably set forth in an article by Mr. Jakimuik and a fellow-Pole, W. Czerwinski, now also on the staff of de Haviland Aircraft of Canada. Mr. Czerwinski is the designer and constructor of eighteen types of glider and three types of aeroplane. He was a pioneer in the organization of Polish gliding sport—in fact, the first glider flights ever made in Poland were with gliders and on grounds chosen by Mr. Czerwinski. The two engineers are convinced that military transport gliders can be built in Canada and not interfere with our present war production. No engine plant installation is required and, consequently, the items which are the greatest factor in holding up production create no problems. The air frame, when properly designed and prepared for quantity production, may be built outside actual aircraft plants. Another important point to be considered is that big vulcanizers in rubber plants are now partially or entirely idle. Pressure tanks are available for any kind of work, and here is a wonderful opportunity for costly equipment to be used for war purposes.

Polish technicians in Canada are organized in the Association of Polish Engineers in Canada, which works in close co-operation with the Canadian authorities. There is no difficulty for these men in securing positions in war industries, for the factories are well satisfied with the quality of their work. These technicians possess, in addition to knowledge and experience, ardour and energy, for the Poles consider their work a weapon against the invaders of their homeland, where today their kindred suffer and starve as they pray for deliverance. The majority of the engineers are employed in aircraft factories, but some are working in electrical and chemical industries, others in research, and recently several civil engineers have obtained positions in their particular field. The greatest number of Polish engineers are in the two largest industrial centres, Montreal and Toronto, but others are working in Ottawa, in Hamilton, Fort William, Weston, etc.

The Association of Polish Engineers is also in touch with the Engineering Institute of Canada and members of the Association living in Toronto have even founded a University scholarship for sons of Polish emigrants and are organizing special technical courses for Polish-Canadian boys. At the present time, more than 60 students are enrolled, who, after three months of study, will be prepared to enter war industries.

Last summer, The Financial Post conducted a survey of the Refugee Industries established in Canada in recent years. This revealed that the new-comers from Europe of the type involved in the survey can establish themselves here on a sound and progressive footing and possess valuable attributes in addition to their capital assets and skills. These refugees come from very densely populated countries, where competition is keener and where long periods of training are essential before one is considered proficient. These lands have an older culture and their citizens bring with them not only an appreciation of education, literature and the arts — which can be of immense value to our younger civilization — but also a passionate belief in democracy. One Austrian said to me, "You Canadians scarcely know for what you are fighting, but we know only too well the other side of the picture." With the industrialists came also professional men, scientists and teachers from world-famous universities, to which our young men and women have gone for advanced instruction. The opportunity is now ours to give to Canadian boys and girls the privileges which previously were the lot of a very limited few.

In recent years we have deplored the tendency to leave the country for the city, and these highly specialized industries, which have been carried on in the small communities, offer tremendous possibilities, particularly in Canada, where so much employment is seasonal and secondary occupations would be of inestimable value.

This article, of necessity, gives only the barest outline of the advantages now within our country's grasp through the insenate policy of the dictators, but I hope it may arouse sufficient interest for some of my readers to study the subject, for I am confident that this will result in a demand for a more liberal immigration policy, which will not only save many helpless people, but ensure for Canada the development of her wonderful natural resources and her proper place amongst the nations of the world.

THE RAILWAYS TALK BACK

A. W. CURRIE, M.B.A.
Department of Economics and Political Science,
University of British Columbia.

"THE trouble with the railways is that their management is asleep. The trucks are ruining their business. Why don't railways streamline their trains, give better service, cut rates, waken up before it is too late? They're dead — that's the trouble." . . . And so the argument runs . . . What is the truth of the matter?

First of all, there are some innovations which the public considers important but which are of little value from a railway operating standpoint. Streamlining is a good example. The first streamlined train was operated in 1900 by the Baltimore & Ohio Railroad between Baltimore and Washington, but the experiment was abandoned because it was not profitable. At best, streamlining eliminates part of the resistance due to head winds and hence reduces fuel consumption. It gives little protection against side winds since it cannot prevent the flanges of the wheels pressing tightly against the leeward rail. It gives almost no protection against air resistance underneath the train where projections below the bodies of the cars are prominent. It does cut fuel expenses somewhat, but these are only a small part of the cost of railway operation. Streamlining is good advertising but poor economy. Perhaps it would have been wise for Canadian railways to have introduced a few fully streamlined trains just to show the public that the management had not been asleep but, aside from its publicity value, streamlining does not pay.

On the other hand significant advances in railway operating technique do not attract public attention. For example, fuel consumption per 1,000 ton-miles on Canadian railways was 160 pounds in 1914 but 120—a saving of 25 per cent—in 1938. The average load of net revenue freight per train was 350 tons in 1914, 550 in 1938. The average freight train speed between terminals was ten miles per hour in 1914 but seventeen in 1938 and is steadily increasing. These and similar increases mean savings in fuel, equipment, interest, wages, operating expenses generally, coupled with better service to the shippers. The use of light weight steel or aluminium in cars constitutes a permanent advance in railway operation. So does shot-welding, building cars by fusing the various structural members together thus eliminating the weight of rivets and plates and giving a stronger car with less dead weight. These things pay the railways in dollars and cents but, unfortunately, they do not get the public attention they deserve.

As far as meeting competition is concerned, it must be realized first of all that part of the traffic hauled by motor carriers represents no loss of business to the railways but merely the substitution of trucks for teams in intra-urban and suburban hauls or of private automobiles for horses and buggies. Part of it constitutes an addition to passenger travel, that is, traffic now goes by car which did not formerly go at all by rail. The railways have not lost this business to the motor carriers for they never had it. Nevertheless, highway users have made substantial cuts into the railway business. They have taken away some traffic and in addition have forced reductions in the rates and fares charged on the traffic which the rails have retained.

Until fairly recently the railway rate structure, the prices charged for services rendered, was heavily differentiated. Railways charged markedly different rates for carrying different types of traffic. The rate on silk was several times that on sand even though it cost only slightly more to carry the silk than sand. Differentiation in rates arose because this method of pricing increased the railways' net revenue over what it would have been under any other pricing policy. Differentiation is followed, and for the same reason, by motion picture houses with different prices for afternoon and evening performances, and for balcony and orchestra seats, even though the entertainment offered is almost identical. Differential pricing has been adopted too by hotels and electric light and power concerns. The existence of this pricing structure on railways enabled trucks, by undercutting the higher rates, to capture a good deal of the most profitable business which the railways had and leave the rails with the less profitable goods. In order to keep some of the high-rate business the railways have reduced their rates and the elaborate, highly differentiated rate structure is slowly disintegrating under the pressure of outside competition.

In connection with this competition, it is significant that shippers' demands are becoming more exacting. Before 1920 manufacturers, wholesalers, retailers and even consumers carried fairly large stocks of goods and speed of delivery was not a very important element in transportation service. With the advent of hand-to-mouth buying and the greater significance of style, speed became vital. Moreover, freight carriers had—to use a merchandising term—a problem in packaging, in designing a unit of sale which would suit the needs of the purchaser of transportation service. For a good deal of traffic the unit of sale was much smaller than the typical railway car. In meeting the new requirements of shippers, trucks had obvious advantages in speed, size

of unit, and also in completeness (door-to-door delivery) and frequency of services per day. The railways, however, were faced with a dilemma. Their entire business had been based on the carriage of large quantities of goods at comparatively low speeds and their locomotives, freight cars and operations generally had been adjusted to meet this demand. Much of their business such as the transport of wheat, coal, lumber, newsprint and so on has remained bulky. On the other hand, the carriage of manufactures and of general merchandise after 1920 involved speed, small "packages", completeness and frequency. Operating methods and equipment suited to merchandise were ill-fitted for the bulky goods in the carriage of which the railways still had strong competitive advantages. To use a figure of speech, teaspoons are needed for ice cream, steam shovels for sand, but it is clearly uneconomic to interchange implements, using small implements (cars) for bulk traffic or large ones for merchandise.

Faced with this dilemma, the railways inevitably hesitated before adopting a definite policy. In the last decade, however, railway managers have talked back to the trucks in rather strong language. The over-night freights between Toronto and Montreal move on passenger train schedules so that goods picked up in one city before the close of business one day are delivered in the other city early on the morning of the following business day. At smaller intermediate towns trucks operated by the railways collect goods in the late afternoon and haul them to an intermediate terminal where they are loaded in a freight car and picked up by the fast over-night freight. The same train sets off loaded cars containing goods for intermediate towns and these goods are delivered without delay by the trucks on their return trip very early the following morning. This road-rail co-ordination is being steadily extended. Similarly the railways have broadened their collection and delivery, sometimes known as store-door delivery, service and have modified their charges for this service. They have simplified their classification and made freight tariffs more intelligible to the shippers. Moreover, they have introduced agreed charges. These are rates covering all or most of the traffic of a particular shipper or group of shippers. They are arrived at after negotiation based on a careful analysis of the shipper's past business. Like all railway rates, they must be approved by the Board of Transport Commissioners. Agreed charges tend to reduce accounting, are popular with shippers and protect the railways against shippers who send high value manufactured products by truck and bulky, relatively poor paying traffic by rail. They are, substantially, wholesale rather than retail prices.

In regard to passenger traffic the railways have greatly speeded up many of their trains, have brightened up their cars, introduced reclining seats and "full-vision" windows, reduced fares, and some lines have cut the cost of meals to a reasonable figure. As in the freight business, the railways face a dilemma here too. They can cut fares and give rather lower priced service with the object of inducing travel by the low or medium income groups who might otherwise not travel at all or go by private automobile. It is generally recognized that "a car is an awful expense". The expense per passenger-mile in automobiles can be reduced by carrying a large number of passengers or by driving a large number of miles or both. Typically, the cost per passenger-mile is higher by car than by train but the average motorist either fails to appreciate the high cost of automobile operation or feels that the greater flexibility of the car with respect to time of departure and arrival and as regards routes offsets the higher cost and the possible strain of driving one's own car. As a result railways find it difficult to attract a great deal of traffic from this source except for the longer distances. If they wished, the railways could go to the opposite extreme, bidding for more pullman traffic by introducing special services — air-conditioning, very fast trains, fancy cuisine, stewardesses — and perhaps charge extra fares. In this business the railways face the increasing competition of the airplanes. Also the new facilities make much of the old equipment obsolete. The older cars and locomotives were expensive and still have a great deal of serviceability left in them. A steam locomotive, for example, has an average life of at least twenty-five years compared with five or at most seven years for an airplane. To scrap most of their present equipment would save some operating expenses but the railways would still have to pay interest and depreciation charges on it. The passenger business has never paid the railways and yet the public demands the continuance of passenger service. It is not a question of making a profit but of minimizing losses. Do you minimize losses by letting present equipment wear out, replacing it only when it has become physically useless and the volume of business is sufficiently large to justify replacement? On the other hand, will your total losses over a period of, say, twenty years, be less if you bring in new equipment at once, bearing the interest and depreciation on the old locomotives and cars as an added expense and taking your chances at beating the competition from busses, private automobiles and planes? It is easy to criticize but more difficult to arrive at an intelligent decision on this matter, particularly if you must also bear the financial losses in case your decision is incorrect.

The steady trend toward higher speeds has introduced serious operating problems. Rails, tie-fastenings, roadbed and bridges suited for trains travelling at forty miles per hour are ill-fitted for trains at eighty and must be replaced and exceedingly carefully maintained. The transition curves, the "banks" or elevations on the outside of curves, must be re-aligned but a transit that gives smooth riding to a "limited" at eighty means roughness and waste of power to a "local" or a freight at half that speed. In past years automatic block signals, the "traffic lights" along railway main lines, have been placed about one mile apart and have three signals or aspects—all clear (green), caution (amber, if the second following block were occupied), and danger (red, if there were a train or a breakage in the track in the following block). The locomotive engineer had one mile to slow down and another mile in which to stop his train. At high rates of speed these distances are covered in a very short time. To stop a fast train suddenly is expensive because it creates wear on wheels, rails and brake shoes, and may throw the passengers forward in the cars thus creating a feeling of danger among the travelling public. These difficulties may be overcome by lengthening the blocks to two miles or by introducing another cautionary signal light. These changes are expensive and mean that local trains must clear the track a longer time ahead of the fast passenger and freight trains. Even as it is slow, freights and local passenger trains have to clear the main track well in advance of the limited, resulting in idle time for equipment and crew. Alternatively, the slower trains can clear on a split second basis, in which case the chance of holding up crack trains is increased. The same situation applies to track workers. It is to be noted that fast trains operate on a "tight" schedule and that if a few minutes are lost there is little opportunity of making up much time on the remainder of the run to the terminal.

At level crossings protected by signal lights a limited train covers in a very short time the half-mile within which, at present, any train works the crossing signal. Consequently the motorist does not receive adequate warning of danger. To lengthen the signal block to perhaps one mile gives the motorist ample protection on fast trains but the slow freight or "drag" takes so long to reach the crossing that the motorist either waits impatiently or "slips by". Unfortunately the motorist may misjudge the speed of the train and arrive in a hospital or a morgue.

In order to attain higher speeds the locomotive driving wheels have to be made larger and the boiler must be elevated in order to clear the axles. A locomotive cannot be slung like an automobile because unless

the pistons operate in a certain relationship to each other such a strong torque develops that the locomotive may break down the track. With a boiler sitting above high axles the locomotive is unstable and the leading wheels make heavy thrusts on the rails to the serious detriment of the track and of the locomotive which may turn over.

In short, higher speed of operation is not simply a question of replacing slow trains with faster ones. It means an entire readjustment of railway operations; it means capital expenditures and scrapping equipment long before it has become worn out.

Enough has been said, perhaps, to show that railway management has been faced with difficulties which the public does not understand and has adopted policies which the public does not appreciate. The glamour has largely gone from railways now that small boys aspire to be airplane pilots or radio announcers rather than locomotive engineers. A single truck with, at most, five tons of freight looms more largely in the mind of the motorist than a train with five hundred tons because the latter, operating away from the main highways, is rarely seen. The railways are restricted in introducing innovations not merely by dilemmas in policy-making and the high cost of the equipment which may have to be scrapped but also because the employees are scattered over such a wide territory that it is hard for the management to fire them with their own ideas and enthusiasm. They are limited, too, by regulations imposed by unions, by heavy interest charges and by the necessity of going to the Board of Transport Commissioners for approval of rate changes. Their traffic volume has been reduced not merely by the competition of planes, trucks, busses and private automobiles but also by hydro-electric power lines which have reduced the demand for coal, and by the better location of manufacturing plants, the more economical use of raw material, the slackening in the rate of growth of Canada's population, the business depression of the thirties and, generally, by the decline in the amount of freight carried by any mode of transport.

In short, the management has not had a free hand. Yet after all these qualifications the railway management might have done better. But the fault is clearly not all on one side. Dewing's comment on the causes of business failure is appropriate here. "After the most exhaustive and illuminating analysis of economic causes of business failure, there must stand out always the fact that a business fails because the managers do not possess the necessary skill, foresight, initiative,

perseverance, and intellectual power to compel its success . . . Yet recognizing fully these psychological conditions leading to failure, one may still speak of fundamental economic causes, in the sense of economic conditions which will, under the leadership of any but a business genius, lead to failure." The purpose of the preceding article has not been to apologize for railway managers but to point out the limitations under which those managers necessarily have conducted their operations.

LET THERE BE TRADE!

E. H. MORROW, M.B.A.
Head of the Department of Commerce,
University of British Columbia

What It's All About

RECENTLY two substantial exporters of Vancouver queried the possibility of returning to normal operations after the war. They foresaw the likelihood of having indefinitely to serve Canada as "independently operating civil servants" under government regulation. Strangely, perhaps, they did not appear unduly disturbed at the prospect of never again being able to conduct their businesses fancy-free and according to the rules of rugged individualism.

Apart from patriotic motives, one suspects that these two gentlemen have discovered unexpected virtues in a regulation that simplifies their problems by removing the speculative uncertainties of normal operation. One also suspects that they typify other businessmen in Canada, men who may exert great influence on the course of post-war events. Hence, the discussion is only an attempt to project this suspicion into the possibilities of the future; it is neither prophecy nor advocacy.

A Little History

During the course of World War I and immediately following, the foreign trade of Canada and the United States increased steadily. In 1920 the total volume of U.S. trade was 13.5 billion dollars; that of Canada 2.3 billion dollars. Two years later, however, the U.S. import-export flow had fallen 48 per cent to under 7 billion and Canada had lost 36 per cent of her foreign business.

The drop was due to a surge of nationalistic sentiment in the world as a result of the war and peace. This was aggravated by a war-extended factory capacity, by a trend towards protective duties and the inability of the United States to accept in kind settlement for the war debts. Feeling the pinch of restricted markets and over-production, induced somewhat by the 1921-22 depression, the U.S. led off with the Fordney Act of September 1922. The act introduced sharply increased tariffs whose effects on outside trade were vitiated by a cyclical recovery in business and by the simultaneous adoption of a policy of lending abroad to establish purchase credits for other countries. The course of trade moved upwards to another peak of 9.6 billion dollars in 1929.

The depression and the Fordney Act combined to reduce Canadian trade sharply during 1922. Our exports to the States dropped 50 per cent in one year; our imports were reduced about 40 per cent. During the subsequent inflationary period, however, Canadian foreign trade soared to new heights by 1930.

With the great depression of 1930-on came a realization for Americans that many of their foreign loans were uncollectible, that sentiment abroad was increasingly nationalistic and that without ruinous foreign lending policies the United States productive plant was considerably over-extended. Drastic action seemed called for and it came in the form of the famous Hawley-Smoot Tariff Act of 1930. The repercussions were not long delayed for in 1931 forty-five countries passed retaliatory tariffs.

Within one year the U.S. foreign trade dropped 2.4 billion dollars and plummetted another 1.5 billion the following year. She lost almost 70 per cent of her import-export trade between 1929 and 1932. Canada felt the new tariff severely, exports to the U.S. falling from 515 million dollars to 197 million dollars or 60 per cent between 1930 and 1933. Imports were in similar case. Like other countries, Canada moved in retaliation and, following the Ottawa Agreements of 1932, threw herself wholeheartedly into fostering an empire trading bloc by means of tariff manipulation. The apogee of trade nationalism had been reached in so far as Canada and the United States were concerned.

In 1933 gears went into reverse and President Roosevelt enunciated the Good Neighbour Policy to be implemented later by a series of bi-lateral agreements, designed to lower tariffs and expand trade. Canada obtained relief on January 1, 1936, and under Premier Mackenzie King embarked upon a series of bi-lateral treaties of her own, reducing Canadian duties in return for similar concessions. The culmination of the new policy came in November 1938, when Great Britain, the United States and Canada encouraged tariff reductions by tri-partite agreement. Throughout all these changes, whether up or down, the average Canadian businessman was dizzily arranging and rearranging his trade relationships, sure of only one thing, *viz.*, that he would be unable to plan far ahead for fear of another change.

Too Late!

By 1935 the trend of tariff rates was definitely downwards among many nations impelled by sheer experience to absorb a lesson in economics and in neighbourliness. These were the so-called democratic nations.

Unfortunately a large section of Europe was beyond any lesson. Fascism was rampant under Italian and German leadership. Economic Nationalism was reaching a culmination under a system of controlled trade, blocked currencies and arbitrarily fixed exchanges. Not only were the financial aspects of external trade being controlled, the physical flow of the goods themselves came under regulation — the so-called Barter System. It meant that a substantial part of the world's trade was removed beyond any hope of participation in the easing influence of a freer movement of world goods. The economic stage was set for World War II.

Will We Do It Again?

Assuming that this sorry flow of events started from the Treaty of Versailles, what was the mistake which generated so much misery? Have we a lesson to learn? Or are we to duplicate the error at the Peace Conference of the present conflict?

Professor George Drummond of the University of British Columbia neatly summarized the situation by saying that the Versailles Conference succeeded admirably in divorcing Politics from Economics. The peace of the last war granted political independence to small racial groups whose economic lives, through the course of decades, had become inextricably interdependent. So for over twenty years small nations have been trying to cram economic bulges into political bottlenecks and it simply could not be done.

An outstanding example of the effects of such a policy is seen in the Ruhr, an area geared even in pre-war days to supply the industrial needs of a prosperous Europe and a great ocean-borne trade. When nationalism backed by subsidy helped to achieve expanded production and restricted markets, the Ruhr population faced unimaginable distress and was ripe for any "ism" that came along. It proved to be Hitlerism. It is one example of many.

There might have been one chance to escape the impasse—to create a vast expansion of world markets sufficient to satisfy the industrial ambitions of all. It was not a practical solution for political and financial-minded 1919. Will it be so for an economic and industrial-minded 194–?

Sooner or later we shall reach a new peace table and, if the lesson of the past has been learned, a strenuous effort will be made to reconcile national political independence with international economic interdependence.

It will not be easy because success will mean the surrender of some measure of economic sovereignty by every nation concerned. Outside of purely local matters, economic sovereignty will have to rest with some international body which will plan for the entire world and which will have the power to prevent any one group from taking action prejudicial to others. The probability of dislocation and sacrifice owing to such a policy cannot be ignored, and if we assume that the trade of the world must be more or less limited to the volume prevailing in 1938 or even 1929 the difficulties may be insuperable. But, if a broad view of international relationships and rights is adopted, it may be possible to avoid any serious industrial sacrifice on the part of any nation or group. Even a partially successful attempt to solve the problem of markets—so studiously avoided at Versailles—may well result in a need for further expansion of industries which on their face will appear to be greatly over-extended at the close of hostilities. At worst a solution may involve changes in equipment for established organizations and new technical applications for certain skilled groups. The past two years have assuredly proved with what comparative ease industry can adapt itself to new requirements and new conditions.

How About It, Canada?

How is Canada going to react to whatever conditions follow the war? How will her industries be affected by the shock of peace?

It is anybody's guess! But we can expect an immediate conflict between at least two concepts. Each will try to control the political destinies of the country so as to mould them to their economic ideals. There will be the reactionary stand-patter, anxious to resume the old pattern and wedded to the shibboleths of high tariffs which he hopes will enable Canada to sell without buying. And there will be the protagonist of industrialism favouring some form of regulation designed to expand and develop world trade irrespective of tariffs high or low.

The controversy is unlikely to follow traditional party lines. Nor will it find businessman aligned against theorist. The opposition is more likely to develop between two distinct classes of businessmen and further to intensify a conflict of opinion which became noticeable during the great depression. It is the struggle between the social and business points of view of the financier more or less removed from the realities of business operation and of the operating executive who is on the job in factory, store or office and who feels immediate responsibility for preserving the human and intangible assets of his business.

The former, in his dependence upon financial statements and accounts, demands before all else a static or increasing book value for capital investment. The latter tends more and more to believe that the real value and permanence of industry depends upon its ability to provide a livelihood for those engaged in it.

No one can foretell which philosophy will prevail or even if either will triumph in the upheavals of peace. The only probability is that the condition of the world after the war will predominate in determining the direction of politico-economic events. One is inclined to believe that pressure of conditions will lend its weight to the industrial rather than to the financial point of view.

If one can be sure of anything, it is that great portions of the world will be hungry, unsheltered, disillusioned and lacking the equipment for manufacturing consumer goods. As an offset there will be in almost every country vastly expanded plants clamouring for conversion to peace-time use and promising an eventual over-capacity of goods of all descriptions. True, much lee-way will have to be made up but it is safe to assume, within measurable time, a world productive capacity utterly beyond previous conception.

Among the countries unravaged by battle will be found, we hope, Canada and the United States, both with hugely extended plants changing over from the manufacture of munitions. Canada and the United States will also have outstanding opportunities to export raw materials to the empty store-rooms of Europe. Foodstuffs will be first on the list but they will be followed by a flood of reconstruction material. Eventually we trust the demand will again centre upon the exports normal to the geographic and economic advantages of North America.

Will Experience Count?

The experience of the post-1918 period suggests a season of depression while industry adjusts itself after the cessation of hostilities. Simultaneously we can expect an exceedingly active export of food demanded by the level of utter starvation to which whole nations will be reduced. It will be, however, a relief type of export dependent upon a continuation of government wartime purchasing policy. Again using experience—for what it is worth—the period of adjustment may endure for two or three years.

The real problem to be solved will hatch as industries at home and

abroad begin to come into peace-time use. Almost every country in the world will be over-equipped for manufacturing many items more or less common to peace and war consumption. Many devastated areas on the other hand will for some years provide markets for special reconstruction and equipment goods adaptable to Canadian and United States export facilities. These two countries will be anxious to supply these goods, but will not require in return the only types of merchandise their customers will be in position to ship, *viz.*, the goods referred to above as being common to war and peace. They are just the products which will enjoy a world-wide over-production consequent upon war expansion.

How then will the Americas receive payment for their exports?

If we repeat the policies of 1919-1939 we shall allow war control measures to lapse upon the declaration of peace; possibly under the illusion that luck will assist us to escape the cycle of events that followed the Treaty of Versailles. One difference should be noted. This time outright gift or lend-lease provisions will obviate the phenomenon of a United States reversing her debtor-creditor position to the tune of 28 billions of dollars—a fact which had emotional and political repercussions vastly exceeding its practical financial application. At least we stand a chance of all being poor and bankrupt together.

Our basic difficulty will lie in the extended capacities of the world's factories and in the necessity of providing markets for their products and work for their personnel. It is true, in Canada at least, that war tax regulations permit depreciation rates designed to amortize war-time capital outlay within the duration. But it would be fatuous to imagine that new and efficient plants will stand aside from competition voluntarily, simply because their capital investments had been written off.

Unless measures are taken to ensure greatly increased exports of manufactures as well as of raw materials, we can look forward to an era of depressive competition beyond anything hitherto imagined. The old method of solution can be tried, namely, that of lending abroad in order to establish credits for payment of exports. But inevitably payment must be accepted in goods if we are to avoid the old cycle of high tariffs; lost or cancelled debts; restricted trade; unemployment; a depression that may crack our entire economic fabric; another war; opportunity for the Yellow Peril. Can one hope for a different outcome from the application of the old formula to corresponding conditions? Experience says No!

Yet it is the old and tried solution which will appeal to a school of thought embedded in the past. It will appeal to the mind which thinks detachedly in terms of "masses" rather than sympathetically in terms of individuals, and which bases decisions on capital values divorced from human values. Powerful forces will stand behind this hitherto more or less successful business philosophy and will in good faith urge upon the political authority of the country a course of action which might conceivably drive the economic life of the world into a chaos resulting, not from the war, but from man's inability to control the forces flowing out of the war.

In opposition will be found equally powerful opinion supporting an ideology also founded on hard experience — the experience of the war itself.

Businessmen are discovering that real capital values remain stable, or even increase, under government regulation. They are realizing that adequate incomes continue to flow, that the uncertainties of speculation are lessened, that the evils of inflation disappear, that the miseries of unemployment and lay-offs are reduced when national economic controls are used to keep the country working for the definite objective of prosecuting a war. Whatever may be the strains of conducting industry under war conditions it would be difficult to find many middle-aged executives ready to assert that these strains even compare with the heart-searing, ulcer-producing worries of the early 1930's.

No democratic man or woman wants war. But increasing hundreds of responsible businessmen and thousands of employed men and women in Canada are wondering if the economic stability of war production cannot be applied to subsequent peace production. They will argue that if foreign exchange controls, priority controls, wage controls, price controls, profit controls and national income controls enable us to keep working for the prosecution of total war, the same controls will keep us working for the prosecution of a total peace. Having tasted of an amazingly well-planned national economy hundreds of thousands of Canadians will not wish to retrace their steps.

It will be maintained that if Canada can be kept busy making munitions to be shot away in destroying the nations of the earth, there is no good reason why Canada cannot be kept busy making peace goods to be given away, for shorter or longer, to the needy nations and eventually to be exchanged as other countries produce goods desired by Canadians. In support of this view its protagonists will offer out of

experience a prospect of steady employment at reasonable income levels and an assurance of stable or increased investment values based upon an expanding world trade, planned and controlled by an ever-widening international body. Under such a system "Free Trade" or "Protection" will cease to have political force or meaning.

For Canada and especially for British Columbia such a prospect has its allure. At our back door lies a reawakened China and an ambitious autonomous India offering the potential market of 800 million people, anxious for economic improvement and an opportunity to trade with us so as to keep Canadians working for decades to come. For a long time the underprivileged countries may be poor prospects according to David Harum standards; but the new thought will be imbued with the idea of investing labour without thought of immediate return, in the hope of ultimate higher standards of living for all. The hard experience of war practice seems to be founded in the broad economic thesis that, given the proper world-wide industrial and commercial set-up, there can be no such phenomenon as over-production.

Difficult readjustments would have to be faced as regards plant use and labour skills. But will these readjustments be the more disruptive if made on behalf of peace requirements instead of in the interest of war necessity? Many of our plants have already ceased regular production in order to manufacture munitions. In the turnback could they not without great difficulty be adjusted to producing goods better suited to the economic conditions of Canada than were the items previously manufactured?

Such are the two philosophies which one suspects will conflict when victory lies with the United Nations. Both will be founded in experience; one will look back; the other will cast forward; each will be powerfully supported. One point of view will measure the success of our economic system by its ability to maintain undepleted the book values of the financial world; the other will test modern economic society by its power to provide jobs for all who are able and willing to work.

TOBACCO GROWING IN CANADA

EARLE SPAFFORD

President, Imperial Tobacco Company of Canada, Ltd.

* * *

MANY people think of tobacco growing as something that is comparatively new to Canada. It is new only in the sense that in recent years it has expanded to the proportions of a very considerable industry, because of the discovery that one particular kind of tobacco leaf, that previously had never been grown in Canada at all, could be grown here in a quality that ensured it a ready sale at good prices.

HISTORICAL

Actually, tobacco leaf is one of Canada's oldest agricultural products. The first people to use it were the native Indians. Jacques Cartier found them smoking it when he sailed up the St. Lawrence over 400 years ago. The leaf at that time in use was probably wild. But with the infiltration of settlers from France, who were quick to acquire the smoking habit from the Indians, the cultivation of tobacco definitely began. The birthplace of tobacco growing in Canada was, therefore, the Province of Quebec.

The form in which it was first used became known in time by the name "tabac Canayen". It was a raw leaf pipe tobacco, acrid to the palate but quite popular with the thrifty habitants, who at first grew it only in sufficient quantities to meet their own requirements. With the gradual spread of its popularity among other French-Canadians who lacked facilities for growing it, small surpluses began to be grown for private sale. In course of time it became a familiar product in community markets and general stores.

Shortly before Confederation Quebec began to grow its second type of tobacco, *viz.*, cigar leaf. The primary market for it being not homes but tobacconists' workshops and small factories, each with a definite quality requirement that had to be met, its growers had to learn and practise approved methods of curing. This they did, with the result that the growing of cigar leaf was soon established on a sound commercial basis. The Yamaska Valley and the territory tributory to Joliette are the districts most favoured for its cultivation. Production was at one time much higher than it is today. It reached its all-time high about 1913. Between the years 1920 and 1937 it fell off by more than 50 per cent, because tobacco users were beginning to prefer

cigarettes to cigars. Since 1937 it has regained a lot of the ground previously lost.

The third type of tobacco leaf to be grown in Canada was Burley, which today is the favourite with pipe smokers who like to buy their tobacco ready cut and packaged. The growing of Burley leaf is centred in Ontario, in the Counties of Essex and Kent. Experimentally, it was grown in Essex as far back as the days of the Napoleonic wars, but it was not until the last decade of the Nineteenth Century that it began to assume the proportions of a specialized industry.

At the turn of the century Canada's total production of tobacco leaf, including all kinds, was only about 11,000,000 pounds a year, divided between Quebec and Ontario roughly in the ratio of two to one. But over the last 40 years that picture has completely changed. Total Canadian production of all kinds in 1939, the year when it reached its all-time high, was in the neighbourhood of one hundred and seven million pounds—nearly ten times as much as in 1900—with Ontario producing more than six times as much as Quebec, instead of only half as much as was then the case.

Cigarette Tobacco

This transformation has been due entirely to the discovery that flue-cured tobacco leaf, the kind mainly used in manufacturing cigarettes, could be grown of excellent quality on the sandy soil and under the sunny skies of Norfolk County in Ontario. For the first few years following that discovery progress was comparatively slow. Growers had to learn, mainly in the hard school of experience, not only the theory but the practice of methods of cultivation differing from anything they had previously known. They recognized that when profits did come they were often the result more of good luck than of good management. As recently as 1927 the production of flue-cured leaf in Ontario totalled less than seven million pounds.

But with the appearance of regular, deserved and attractive profits from the cultivation of flue-cured leaf, the industry quickly spread to the adjoining counties of Elgin, Brant and Oxford. By 1931 Ontario's production had jumped to twenty-four million six hundred thousand pounds. By 1935 it was up to thirty-five million pounds. In the next two years, spurred by the profits Ontario growers were reaping, growers in both British Columbia and Quebec increased their acreage. Meanwhile Ontario's acreage continued to pile up. In 1939 the production of flue-cured from all three provinces reached the phenomenal total

of eighty-one million six hundred thousand pounds, of which Ontario contributed seventy-six million four hundred thousand pounds, Quebec four million eight hundred thousand pounds, and British Columbia a little more than three hundred thousand pounds.

Factors Stimulating Expansion

An expansion in Ontario as rapid as that becomes understandable only when it is seen how many, how varied and how potent were the influences favouring it.

First was the fact that not only was there an abundance of soil suitable for tobacco growing—thousands upon thousands of acres in fact—but much of it was soil on which other farm crops could not profitably be grown. To owners of such land tobacco growing opened up possibilities of income where previously there had been none. Little was to be lost and much might be gained by trying it. The urge to try it was therefore great.

Next was the common talk, to which they lent an attentive ear, of extraordinarily high potential dollar yields per acre from tobacco growing, as compared with the dollar yields from other field crops. Official statistics reflecting returns to growers in the Southern States filled them with optimism. As these began to be approximated, and sometimes even duplicated, in the dollar yields received by some of the early Norfolk experimenters, optimism gave way to enthusiasm. A few recent figures will serve to show how justified that enthusiasm really was. In the four counties in the Ontario flue-cured area, farmers received in 1940 the following average dollar returns per acre for typical crops other than tobacco:

	Brant	Elgin	Norfolk	Oxford
Fall Wheat	$24	$16	$17	$18
Oats	13	14	13	13
Peas	27	33	28	31
Beans	22	23	26	24
Rye	8	9	9	10
Buckwheat	9	9	9	10
Corn for Husking	16	18	19	20
Potatoes	48	52	53	51
Turnips	53	53	53	52
Hay and Clover	13	12	12	14

In contrast with these, over the past ten years the per-acre dollar returns

from tobacco growing have averaged $225 per year! The high was last year when it reached $354.

Cautious would-be growers were, of course, quick to see that, offsetting these high per-acre dollar returns would be capital outlays for greenhouses, kilns and other specialized equipment. Before embarking on the venture they had first to satisfy themselves that the profit opportunity would not prove to be just a temporary one created by an existing shortage in the leaf supply, but one likely to carry on well into the future. On that score all the indications were found to be reassuring.

Cigarette consumption in Canada was rapidly increasing. More and more people—men and women, town folk and country folk—were taking to smoking cigarettes. Government statistics of cigarettes released for consumption clearly reflected the trend. Releases that totalled only two billion four hundred and forty million in 1920 had risen to five billion one hundred million by 1930. Yet even at that figure it was known that Canadian per capita consumption was still far behind that of the United States. The likelihood of a continuing and expanding domestic market seemed therefore to be fairly well established.

It was only logical to expect that Canadian manufacturers, faced with such rapidly increasing demands, would welcome an opportunity to free themselves from dependence upon imported leaf, by giving every encouragement to the development of an adequate domestic source of supply. Statistical proof that they were doing so was ready to hand. The per cent of domestic content in Canadian-made cigarettes was steadily rising. Starting from nothing when the first domestic flue-cured came on to the market, by 1926 it had advanced to 25 per cent. As the quality improved and drew nearer to a parity with imported leaf, it continued to climb. By 1930 it was approximately 50 per cent, and by 1933 it was up to 68 per cent. Meanwhile, imports of Southern flue-cured leaf were dropping correspondingly.

But it was soon realized that calculations as to the quantity of leaf that could profitably be grown in Ontario need not be restricted to what the domestic market could absorb. The export market loomed up as a distinct possibility. This is another case where early expectations found their justification in later developments. Experimental shipments made in due course to manufacturers in the United Kingdom evoked reports that were reasonably encouraging. Later shipments of a somewhat better quality led to repeat orders that marked the begin-

ning of a small but regular trade. Still later, when the United Kingdom granted a preference to Empire-grown leaf, Canadian growers were to find themselves in a much better position to compete in the British market with growers in the Southern States.

If anything more in the way of encouragement were needed to move the ultra-cautious and the laggards into action, it was supplied by the sight of so much outside money, and so much outside labour, flocking in to share in the new-found opportunity. Several joint stock companies were formed to acquire large tracts of suitable land, and to cultivate them under the direction of experienced growers brought up from the Southern States. At the same time large numbers of men, with little or no capital but with a good working knowledge of tobacco growing, kept arriving in search of land that they could cultivate either as renters or share-croppers. What was good enough for those outsiders who knew, and for those other outsiders who were prepared to back their judgment with real money, was accepted by hundreds of insiders as good enough for them. And thus the growing of flue-cured tobacco was started on its spectacular career.

Learning the Technique

To many of the would-be growers the first few years were trying ones. They found they had everything to learn and that competent teachers were few. For the most part they had to content themselves with copying methods known to have been successfully employed by earlier starters. And here they encountered much grief.

But experience is a good if often a costly teacher. For thus growers came to learn many strange things about tobacco growing, that one must know and understand to be successful. Among the first of them was that it did not necessarily follow that, just because tobacco grew well on one field with a certain soil analysis, it would grow equally well on another field only five miles away, with the same soil analysis. In time they learned that differences in the sub-soil, in under-drainage, in sunshine, rainfall, exposure and altitude were all factors affecting the measure of success or of failure.

They also learned that a mixture of fertilizer that had produced excellent results on one farm with one type of seed, would not necessarily produce similar results on an adjoining farm with a different type of seed. The standard fertilizer is one made by a mixture of nitrogen, potash and phosphates, and the proportion of each can frequently be varied to advantage, depending not only upon what the

actual soil requirements are, but upon what will best improve quality for the particular plant species to be grown.

Flue-cured leaf has the essentials of quality in proportion, as the leaves are of medium size with a fine but smooth texture, as they have a silky lustrous finish and are bright in colour, as their starch content is high enough in sugar to give it sweetness, and as its "burn" is soft and slow.

Instructional Aid in Overcoming Difficulties

Of great assistance to the growers in overcoming their early difficulties, and in bettering their methods of fertilizing, planting and harvesting, was the practical instruction and advice made available to them, on their own farms, by the Imperial Tobacco Company in collaboration with Provincial and Federal Departments of Agriculture. In charge of this work was a technician of world-wide experience in growing all types of tobacco. Upon him the Imperial Company laid the special responsibility of operating scores of small experimental and demonstration plots, gladly loaned by farmers in all parts of the tobacco growing area. Under him were eight instructors, each with from 15 to 25 years of specialized experience in the growing of flue-cured, whose duty it was to visit the farmers at frequent intervals all through the season, enquiring into their difficulties and offering helpful advice.

Some idea of how beneficial this instruction and these demonstrations were to the growers themselves can be had from mention of just three of the many improvements they were responsible for introducing.

First was the practice, soon generally followed, of spacing the plants closer together in the rows. When spaced far apart it was observed that plants tended to throw most of their strength into the lower leaves, with the result that they became squatty and coarse. Closer spacing caused them to shoot higher up, like trees in a forest, and to develop leaves of lighter colour and finer texture, with smaller veins. Thus not only was quality improved, but closer spacing meant more plants per acre, and hence an increase in yield per acre.

Second was the discarding of the traditional harvesting practice of cutting the stalk when the plant as a whole was at an average stage of maturity, in favour of the better practice of cutting off the leaves—first the bottom ones, later the middle ones, and finally the top ones—just as they reached full maturity in each case. By this means there was assured a higher average of quality for the whole plant. There was

also secured a higher yield in pounds per plant because of the added energy that the plant threw into the ripening of the leaves that remained.

Third was the discovery that by increasing the percentage of phosphates and reducing the percentage of nitrogen in the fertilizer used, maturity could be hastened by from seven to ten days — an achievement of great value in obviating the losses all too frequently occasioned by early frosts.

Over-Production

Unfortunately in one sense, the betterment both in quality and yield per acre resulting from these forms of practical help may have contributed in a small way to the over-production, with its attendant evils, that occurred in the early thirties. But that was a development that was bound to come sooner or later, with profits to the grower as high as they were, and with suitable but as yet uncultivated land as plentiful as it was. Acreage for a time increased at a rate out of all proportion to the increase in demand. Production finally reached a point where a large carry-over was inevitable. As a consequence, average prices to the grower fell sharply.

Flue-Cured Marketing Association

Membership in this association is entirely voluntary. It consists on the one hand of growers willing to co-operate by submitting to acreage control, and on the other hand of buyers willing to supply the information as to probable requirements, on the basis of which the needed acreage can be intelligently estimated. All the buyers of Canadian flue-cured tobacco, including processors, leaf dealers and buyers for export, are members of the association. The growers who are members account for about 82 per cent of the total production.

Acreage control is, of course, only one of the association's useful functions. Under the well-defined and described seventeen grades of the association, each crop is graded and it is on this basis that an appraisal of each crop is reached, and it is on a composite grading of the whole crop that the price for the crop is agreed upon each year at a meeting between the representatives of the growers and buyers.

Under the able chairmanship of Professor Archibald Leitch the association has abundantly justified its existence. It has managed to keep at all times fairly well in hand a situation that, but for its wise and tireless efforts, might easily have resulted in chaos. Naturally

there has been criticism from non-member growers who have failed to score the advantage they hoped to score by disregarding the association's advice, and increasing their acreage when they would have been wiser to reduce it.

Significant Facts

Looking back over the record of flue-cured growing in Ontario, and forgetting for the moment the difficulties and setbacks that have sometimes been an obstruction to clear thinking, certain achievements stand forth as conspicuous because of their very special significance.

First is the fact that, notwithstanding the ever-increasing quantities grown and the large amounts that have sometimes had to be carried over, eventually markets have always been found, and nearly always at profitable prices. It has been demonstrated by taking a representative cross-section of growers and averaging their costs and crop yields that a price per pound of from 19 cents to 22 cents is a very profitable price for the average grower. Over the past fifteen years the average price has only once dropped below 19 cents. Three times it was between those two figures. The other eleven times it was above 22 cents, and three of those times it was above 30 cents.

The second is that the tobacco content of Canadian-made cigarettes is at last almost 100 per cent domestic. No longer need American flue-cured be blended with Canadian flue-cured to improve the latter's quality. Canadian flue-cured has been raised to a quality equal to the best grown in the Southern States.

The third is that along with the growers themselves whole communities have benefited from the activities of the flue-cured industry. Retail sales have grown as consumer purchasing power has been increased. For six weeks every fall they take an additional spurt when hundreds of curers from the South invade the tobacco area. Winter-long employment at profitable wages has been provided for thousands in the plants erected to process the raw leaf. Farm lands that before the coming of flue-cured were practically unsaleable at any price now have an average value of $200 per acre.

Outlook for the Future

On the whole, the outlook for the industry seems to warrant a reasonable amount of confidence. Domestic consumption of cigarettes has continued to increase, despite higher taxes necessitated by the war. The five billion one hundred million figure previously cited for 1930 has

been left far behind. In the calendar year 1940 the releases totalled seven billion five hundred and seventy-two million. Last year they reached eight billion five hundred and eighty-one million.

It is significant that it has made the gains it has under the handicap of excise and sales taxes more than double what they are in the United States. Here they amount to 8¾ cents per ten cigarettes; there they are only 3½ cents. Under the circumstances, it is perhaps little wonder that our per capita consumption is only half of what theirs is. Yet in that very fact lies warrant for the hope that the domestic market will make a further advance once the war is over, and it becomes practicable to reduce taxes to the United States level.

The acute shortage of ocean tonnage that for a time prevented exports to Britain has begun to ease somewhat. Already this year two quotas totalling thirteen million pounds have been authorized for shipment. As pre-war reserves of flue-cured leaf in England have been completely exhausted, the opportunity for Canada to benefit by replenishment orders after the war should be good. As to her ability to deliver leaf of the required quality, there can be no question. But her growers must be prepared to meet the export prices quoted by other producing countries.

Meanwhile processors in the British West Indies, in Latin America, in Australia, New Zealand and Newfoundland have all suffered some disruption in previous sources of supply. The export possibilities of each of these markets are an encouraging factor to the Canadian grower.

CANADA'S OIL PROVINCE

R. D. MACDONALD, Ph.D.
Department of Geology, University of Western Ontario

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THE story of Canada's oil production centres around the provinces of Ontario and Alberta. Ontario was the first producer in Canada. Its maximum production, however, was reached in the 1890's and since that time production has gradually decreased. During 1941 the Ontario production was 156,000 barrels, as compared to a maximum production of 820,000 barrels in 1895.

In contrast to the present-day decline in production from Ontario, the Alberta oil industry is now showing a marked yearly increase. At the present time Alberta stands as the single important oil-producing province of Canada and, exceeded by Trinidad, as the second greatest producer of oil in the British Commonwealth of Nations. In such a position, the Alberta oil industry becomes of great importance in Canada's wartime necessities and of interest to all Canadians.

Alberta's oil and gas industry has been built up over a period of years dating back to 1890, when gas was first produced in the Medicine Hat area. Oil was first obtained in 1898 in the Pincher Creek area, but the amount obtained was small. Following these early discoveries, greater success was had in finding gas than oil. Although minor amounts of oil were obtained, nothing of importance was found until 1914. In that year the first oil well of the Turner Valley field was brought into production. The post-war period, 1919 to 1928, was the first period of systematic search for oil in Alberta. The major achievement of this period was the establishment of a strong gas supply from Turner Valley, and with this gas a supply of naphtha. Other showings of oil in the province did not give sustained supplies.

Alberta's petroleum industry as it stands at the present time is based largely on the production of crude oil from Turner Valley. The discovery of this supply of crude oil was made in 1936. Mainly because of it, the production of oil in the province has risen from 2¾ million barrels in 1937 to 9¾ million barrels in 1941. The field has not yet reached its maximum potential for production. Present indications are that the province will produce approximately 10½ million barrels in 1942, the increase in production for the year being attained by new wells in the Turner Valley field.

The actual and potential oil-producing areas in Alberta can be divided into five regions:

(1) The narrow belt extending along the east of the Rocky Mountains, known as the Footbill Belt;
(2) The Central Alberta region;
(3) The Southern Alberta region;
(4) The Eastern Alberta region;
(5) The Northern Alberta region.

Of these five regions, the Foothill Belt has been the most important, since the Turner Valley field, Alberta's main oil source, lies in it. Production figures for 1941 show that of the 9,930,119 barrels of oil produced, 9,830,343 barrels came from Turner Valley. Such figures might leave the impression that practically the whole of Alberta's production comes from one field and that the remaining 99,776 barrels represents production from relatively unimportant fields. Although it is true that Turner Valley is by far the largest present-day producer, the remaining oil comes from such widespread areas as to indicate the possibility of numerous oil fields within Alberta. That no great production has been obtained from these areas may be attributed to a lack of sufficient exploration or to geological difficulties hindering discovery, rather than to an actual absence of oil.

The Central, Southern and Eastern Alberta regions produced 78,300 barrels during 1941. This came from wells as widely separated as the Del Bonita field, on the southern boundary of the province, to the Vermillion field, lying approximately 110 miles east of Edmonton. In comparison to the Turner Valley field, the wells in these areas are not as deep and the drilling is easier. These advantages in cost, however, are offset, at least in part, by the difficulties encountered in locating oil. Present methods of prospecting may do much to help in the finding of new poducing areas, but such methods are expensive and the extent to which they can be used is restricted. Although there is small likelihood that any single field as spectacular as Turner Valley will be discovered, the known presence of oil in such widely separated areas lends distinct possibility to major fields being opened up.

The Turner Valley field has shown a remarkable rise in production since 1936. During 1941 it produced approximately 98 per cent of Alberta's total, 97 per cent of Canada's total production and 18 per cent of the production of the British Commonwealth of Nations. That one field can be of such importance gives an indication of the possibilities for the Alberta Foothill region where geological conditions are similar to those at Turner Valley. Some of the better chances for future finds are in this belt.

The oil-producing areas of Alberta, so far discussed, are the common type of oil field, in that the oil is obtained from wells drilled to considerable depths below the surface. In Northern Alberta, in what is known as the McMurray area, is a unique deposit of oil. It has been known since 1788; much has been written on it since then and much scientific investigation has been conducted on it in an attempt economically to exploit it. In spite of these numerous attempts at exploitation, the first official figures of production from the McMurray deposits were listed in 1941. In view of the present needs for expanded oil production these deposits now take on added importance.

The McMurray oil deposits differ from the more common type of oil deposit in that they lie at or close to the surface, and in many places show on the sides of river valleys. The oil is contained in a layer of sand that varies from 100 to 200 feet in thickness. Estimtaes as to the areal extent of this oil-bearing sand vary from 10,000 to 20,000 and more square miles. Estimates as to the amount of oil the sands contain vary from 100 billion to 250 billion barrels. Some idea of the remarkable nature of these figures can be obtained when they are compared with estimates of the total oil resources for the rest of the world. Such estimates place the world's oil reserves at 35 billion barrels. The McMurray deposits, then, contain from three to seven times the known total reserves of the world.

Why then are the deposits not being extensively exploited? By their nature, certain economic difficulties are present that make it difficult to exploit them economically if they have to compete with flowing oil wells. The major production cost for oil wells is the drilling of the well. Some additional cost may be present in pumping the oil from the well, but since the product is liquid, the cost is relatively low. In the case of the McMurray sands, the extraction of the oil involves the handling and treating of the sand in order to liberate the oil. Since the oil forms about 15 or 20 per cent of the volume, the major portion of the material that has to be handled is waste. The necessary higher production cost would then indicate that the McMurray deposit could compete in a local market only, where lack of transportation costs would give it an advantage over oil transported from more distant points.

The production of 21,476 barrels of oil from the McMurray deposits in 1941 was largely marketed in the mining country to the north. This production represents a start in an industry that may prove of immense value in Canada's present needs for oil. Oil men

differ in their ideas as to the economic feasibility of the deposits, and many believe that the deposits cannot produce in competition with oil from oil wells. That a narrow margin between feasibility and non-feasibility exists is indicated by the activities of the company now working the deposit. This company is working on the most easily mineable of the oil sands in a location close to Fort McMurray. Company estimates indicate that immediate work could be started in this location, which covers 10 to 20 square miles, with a potential production from it of 500 million to one billion barrels. Such a potential represents but a small part of the total oil present in the McMurray deposits, but even at the production rate of 10,000 barrels a day it would represent a supply for 14 to 28 years. These are the plans that one company foresee as possibilities for production. Much greater production than this would not be out of the realm of possibility if equipment were available and prices were sufficient to encourage production.

Alberta's oil production, even with the remarkable increases it has shown since 1936, constitutes less than one half of one per cent of total world's yearly production. This production also forms but a part of Canada's needs for approximately 97 per cent of its yearly consumption is imported. The problem of cutting down this deficiency rests almost entirely with Alberta. At present more new wells are being drilled than at any previous time in Alberta's oil history. Such a programme should tend to maintain the increase in production that has been shown for the past five years. But even this increase in supply has not kept up with the increased demand brought about by war conditions. This deficiency may be met by the discovery of new oil fields but such success cannot be assured. In view of the present pressing needs for oil, the exploitation of the McMurray oil sands may be considered a justified and necessary step, even though the costs of production are higher than for oil obtained from wells. As in the case for many of our metallic minerals, production, not cost, has become the important keynote. Although many difficulties, such as those included in obtaining equipment, may stand in the way of opening the McMurray deposits, the achievement of such aims would result in an assured and steady production of oil for many years. Since the character of the deposit is fairly well known, the amount of oil obtained from them would be limited more by the amount of equipment made available for the programme than by any other factor. In a period when the need is great enough to overshadow increased costs, surely the McMurray deposits have a place in the advancement of our war effort.

In the preparation of this article, information and statistics appearing in recent publications by M. W. Ball, J. L. Irwin and A. W. Furmilo in the Canadian Mining Journal and the Bulletin of the Canadian Institute of Mining and Metallurgy has been used. The writer wishes to acknowledge the information there obtained.

JOB EVALUATION

SAMUEL L. H. BURK

President of Industrial Relations Association of Philadelphia; Chief Job Analyst of the Atlantic Refining Company.

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VERY few conferences or conventions on management held today complete a programme without a paper or speech on job analysis, job evaluation, position classification, or related subjects. Of considerable interest in the past ten years, particularly since about 1935 or 1936, job evaluation is only one part of a complete programme usually called "wage and salary administration". Cogent consideration of the subject of salary and wage administration requires that before discussing techniques, of which job evaluation is one, we acquire some idea of the basic principles involved in the entire subject of employees' remuneration.

Techniques are undoubtedly important, but if such techniques are applied with a supreme unawareness of the basic principles in any field of management, successful administration is extremely problematic. It must be admitted that more programmes attempting to achieve successful salary and wage administration through the initial introduction of the job evaluation technique have failed than have succeeded. These failures, however, must not be held against salary and wage administration, or job evaluation, or merit rating, but must be laid at the door of an unsound approach to the subject, characterized in most instances by failure to recognize or to apply the underlying principles.

It is not within the scope of this paper to discuss the economics of labour relations in general, or of wages specifically. Therefore, without delving too deeply into the realm of economic theory, we must realize that salaries and wages are paid from a fund which is made available by adding value to a product or service, through the co-ordination of the basic economic factors of land, labour and capital. When such value is added, that is, when wealth is produced, each of the three factors must participate in such wealth to the extent that they have contributed to the value added to the product or service. Salaries and wages are labour's share in this added value and are, therefore, economically justified. The size of labour's share in value added relative to that of the shares awarded to labour and capital is determined competitively, that is, on the basis of the supply and the demand of labor relative to the supply and demand of land and capital. The individual labourer's share in the total wage fund is determined by his relative individual contribution to the value adding process.

Economic theory fails completely, however, in setting up any mechanism whereby labour's share, represented by the total wage fund, or the individual share of any labourer can be quickly and scientifically determined. Management must work on the basis of the generally accepted axiom that wages must provide a standard of living represented, for the very lowest grade of work, by that required to maintain a minimum health and decency level, and must also provide for wage and salary differentials to be paid for increased difficulty of performance, and increased responsibility. Any business that cannot provide minimum wages that will provide a minimum health and decency standard of living and reasonable and suitable differentials above this minimum cannot compete for labour and, therefore, cannot stay in business.

There have been a number of attempts to systematize or to make "more scientific" the determination of labour's share or the share of any individual worker in the labour group on the basis of some economic theory. Management, however, while recognizing the soundness of economic theory and realizing the implication of this theory in limiting and defining management's responsibility to land and captal as well as labour, must be practical and set up some means whereby the problem of remuneration can be solved in a manner that is satisfactory to all concerned. The literature on the subject is replete with descriptions of innumerable systems employed to attain this end. Accurate analyses, descriptions and classifications of evaluation systems have been made by such authorities as the National Industrial Conference Board, the National Association of Manufacturers, Industrial Relations Counsellors, etc. The attempt of this paper is not to summarize or repeat any of these excellent surveys, but rather to lay a background for further and more detailed research into methods and techniques by those interested in the subject.

The problem of employee remuneration is, however, so complex that it does not lend itself readily to an overall approach. We must realize that there are at least five separate parts to the problem. The first part involved is the determination of job differentials, that is, differences in total difficulty and importance among jobs within an organization. The second part has to do with pricing the job comparison schedule which results from determination of job differentials. The third part of the problem has to do with evaluating differences in performance among individuals on the same job, and on jobs of equal grade. The fourth and fifth elements in determination of wages and

salaries covers a study of the situation in the industry and the particular company within the industry with relation to their profitability, general conditions, traditions, policies and practices.

Some of these factors are interdependent and some independent, but the fact must be recognized that they are all variables which contribute toward the satisfactory and adequate solution of the question at hand. While it must be recognized at the outset that no scientific results can be obtained, it is necessary to bear in mind at all times that a scientific approach is the only way of achieving a systematic solution. Therefore, we must adopt the scientific method by approaching the solution of the problem through separate consideration of the many variables. For example, length of service is a factor having to do entirely with the man on the job, and not with the job itself, and therefore, when the question of job differentials is being considered, the length of service of the individual who happens to be assigned to the position at the time of the study should not be considered in studying the job rate. From a strictly economic viewpoint, it is questionable whether length of service should be considered, even when assigning a rate to the man on the job, unless length of service contributes to improved or increased performance on the part of the incumbent.

Inasmuch as there are both independent and interdependent variables to be considered, it is necessary that these variables be studied one at a time, as separate steps in the salary and wage administration procedure. At the same time each step must be considered as a part of an entire programme, and not as an isolated survey or study. Herein we find another cause for frequent failures in the salary and wage administration field. Frequent abortive attempts to make some kind of a partial installation of a formal salary and wage administration programme in order, for example, "to prove to top management its value" have done more harm than good to the general acceptance of such programmes, in that they have not only registered another failure for systematic salary and wage administration, but inhibited future attempts on the part of the company to complete more solidly founded installations.

No programme of systematic salary and wage administration can be successful in any company without the full and complete backing of the executive personnel. In order to secure this top management acceptance, it must be fully realized by all concerned that all of the steps or variables are parts of an integrated whole. Unless the company is willing to complete the entire programme, it is extremely doubtful

whether any one phase of the programme should be attempted. Moreover, all of the steps in a systematic and orderly salary and wage administration programme are a continuous process. Once started, management must be prepared actively to maintain them. On the other side of the picture, management must recognize the fact that in handling matters of salaries and wages with employees, it must place itself in the position of "knowing" rather than in the position of "guessing", and that its decisions must be guided by wisely pre-determined policies rather than by expedience. Inasmuch as the wage or salary problem is one of the primary causes, if not the chief cause for unsatisfactory labour relationships, able management will recognize the need for a definite technique of handling this otherwise troublesome phase of labour relations.

In a paper of this length it would be impossible to discuss in great detail the principles and techniques involved in the study of all five variables. Determination of relative employee performance, commonly known as merit rating, is one subject that we cannot touch upon. Study of the industrial or company situation with respect to pricing the job comparison schedule is also too lengthy for consideration. We shall, therefore, confine ourselves to the determination of job differentials and the method employed in pricing the comparison schedules so secured.

Determination of job differentials involves, first, accurate analysis of job content and requirements. This step is usually known as "job analysis". It means getting the facts, securing opinions, and recording these facts and opinions in some standardized form. The immediate result of job analysis is a job description or job specification, which serves as a basis of job evaluation. There are also numerous secondary results, chief among which are:

1. An aid to the personnel department in selecting and placing employees;
2. A basis for organization studies;
3. A foundation on which more detailed method studies may be made;
4. A source of considerable education to the supervisory and technical personnel.

In all but the very smallest companies, job analysis is usually accomplished by a group of specialists working either under the direction of the industrial relations department, or the industrial engineering

department. Job analysis and evaluation are primarily industrial relations functions, but various organization problems frequently make it necessary for some other department to direct the work. Individuals chosen to do the actual job analysis work must possess a high degree of analytical ability, the type of personality which provides the ability to secure information from all levels of employees, and the ability to express themselves clearly and concisely in writing.

Before embarking on a programme of job analysis, it is necessary that objectives be well defined and company policies determined in advance. Full publicity should be given to the programme and its objectives, so that there may be no misapprehension among the supervisory or direct labour forces. If more than one individual be engaged in getting and recording the facts and opinions necessary to a full job description, standard practice instructions should be prepared so that the same word or term means the same thing on all job specifications. When the positions held by salaried employees are being studied, it will frequently be found advantageous to use questionnaires, but it should be understood that these questionnaires merely supplement and do not replace the interview with the employees at their work places. Questionnaires frequently serve as an introduction to the job for the job analyst, and give the employees as well as their supervisors a greater opportunity to participate in the programme. They do not, however, provide sufficient information, on the basis of which a complete description can be prepared. Moreover, the analyst cannot get the feel of the work being done unless he actually sees it being done under the usual and normal conditions of work. A number of job analysis programmes have been started on the basis of having the supervisory force prepare the job descriptions for positions under their respective jurisdiction. The result is, of course, a large collection of job descriptions written by a large number of individuals that vary so widely in terminology and method of expression that it is almost impossible to achieve a standardized result. Questionniares cannot be used advantageously in the case of most manual workers, as this class of employee lacks the clerical aptitude necessary to satisfactory completion of such a form. The most commonly accepted method is to employ a specialized group of job analysts to secure the necessary information and prepare job specifications or job descriptions in accordance with written standard practice instructions.

Facts to be secured during the job analysis step include all duties and the frequency of occurrence of each. In connection with each duty,

sufficient descriptive data must be secured in order to bring out the difficulty of the work, as well as the responsibility, decision, and precision limits involved. Other facts include regular working hours, required overtime, surroundings, accident hazards, etc. In addition to the facts listed above, there are a number of opinions having to do with minimum starting requirements on the job, which must be secured and correlated. It is in connection with these opinions that the greatest amount of disagreement in the preparation of job descriptions arises. The best way to come to agreement on these matters is to show how, in the performance of any one or more duties, the qualifications set up as requirements of the job can and must be used.

In recording the results of the job analysis, some kind of job specification or description form is necessary. Companies that are contemplating the design of such a form should not copy completely a form used by another company, regardless of the success in the other company. An attempt should be made to adopt the best features of the other companies' forms to the individual needs of the company being surveyed. When the form has been designed, and the necessary information entered thereon for each job covered in the study, full and understanding approval should be secured from the supervisory and executive force, and preferably the workers themselves, before any action is taken in connection with rating the job.

When one examines the literature in the field of job evaluation, it appears that there are as many methods available as there are companies doing job evaluation work. Actually, however, there are generally but two classes of methods, namely, the ranking and the point rating methods. It is not the purpose of this paper to go into detail of any one job evaluation technique. The best recommendations that can be given any of these methods is that they work successfully in a number of installations. One of the methods which might be classed under the "point" or "rating" group is known as the "factor-comparison" method, and is developed in detail in "Manual of Job Evaluation", Harper and Brothers, New York.

The "factor-comparison" method involves the following steps:

1. Detailed written description of all important duties and responsibilities of each individual position;
2. Job to job comparison to determine relative difficulties;
3. Jobs compared according to the "factors" which are common to

all jobs, and which make one job more or less difficult and important than another;

4. "Key jobs" relating salaries or wages to job difficulty, and thereby establishing a measuring stick;
5. Quantification of each factor by means of points;
6. Appropriately dividing wage or salary of each job among five factors — mental requirements, skill requirements, physical requirements, responsibility and working conditions, in order to quantify the factor scales;
7. Establishing a fixed relationship between points and compensation by calling a "point" either $1.00 per month or 1 cent per hour; depending upon whether salaried or hourly rated jobs are being evaluated.

These steps provide a very satisfactory method, whereby both management and employees can arrive at a satisfactory solution of the question of how much a job is worth relative to other jobs within the organization. If it is desired to pay a range of rates for each job or grade of jobs rather than to pay a flat rate, regardless of differences and individual performance, the points determined upon as a result of the job evaluation procedure are indicative of salary grades or levels to which jobs can be assigned.

The manner of arriving at a salary or wage scale to be applied to the job comparison schedule is commonly known as "making a market survey". The less detailed and older methods of making market surveys frequently led to non-conclusive, if not misleading, results. Dependence upon job titles, even in the more common jobs, such as typists, boiler-makers, bookkeeping machine operators, pipe-fitters, machinists, etc., usually yield such wide ranges of salaries or wages paid in the labour market from which that type of help is being drawn that even the best statistical treatment of the data fails to indicate any appropriate level of salaries or wages.

The most satisfactory way of making a market survey is to pick out 25 to 40 "key" or "anchor" jobs that are common to the company making the survey, and to the market from which it draws the type of help whose jobs are being priced. A brief description of these "key" or "anchor" jobs is sent to the co-operating companies who are asked to pick out jobs in their organization, as close as possible in duties, responsibilities and requirements to those required in the key jobs.

They are also asked to secure data relatve to minimum and maximum salaries paid, and also weighted average salaries or wages paid to incumbents of the jobs of similar content.

After these questionnaires have been in the hands of the co-operating companies for about two weeks, representatives of the company making the survey call on the other companies, discuss differences in job content, rate the competitors' jobs on the basis of their job evaluation plan, and secure appropriate salary or wage information.

An objection to this method of gathering labour market data has frequently been raised, because a number of companies are now making such surveys. This requires considerable duplication of effort on the part of co-operating companies, even though they are glad to participate in and secure the results of the several surveys. This objection can be eliminated by the formation of a market survey group, such as that recently organized in Philadelphia for the interchange of job descriptions for certain key jobs, as well as minimum, maximum and weighted average salary or wage information. In this manner, duplication of requests for information has been considerably reduced and more accurate job description information has enabled the participating companies better to determine the actual labour market involved.

It will be noted that the factor-comparison method yields points which are expressd in terms of cents per hour, or dollars per week, per month, etc. When it is necessary to increase or decrease the actual salary or wage level, it is not necessary to change all the detailed point ratings for every job, as the market ratio of difficulty points to money can be determined and used as a "conversion factor" in converting the points to current salary or wage rates. When the programme has been completed, that is, when the job analysis has been made, the job comparison schedule constructed on the basis of job evaluation, and the job comparison priced by means of a labor market survey, certain individuals will be found to be overpaid, and other individuals underpaid. Most companies make it a practice to increase underpaid individuals to the correct rate or grade minimum of their new salary grade, or in the case of flat rate positions, to the new flat hourly rate. In the case of overpaid individuals, most companies do not make any salary reduction, but provide that future salary or wage scale increases will not apply to overpaid individuals until the amount of the overpayment has been exceeded by the cumulative amount of the salary scale increases.

It must be recognized at all times that there is nothing permanent

about job content except change, and that provision should be made for restudies of changed jobs, as well as studies of new jobs which are bound to be set up from time to time. Moreover, the supervisory and executive force cannot be depended upon to notify the Industrial Relations Department promptly of job changes, and some provision should, therefore, be made for periodic reviews of job content, as well as for periodic surveys with the labour markets for the type of help concerned.

Inasmuch as salaries and wages are a basic factor in the development and maintenance of sound employer-employee relations, management must place itself in the position of keeping its factual knowledge up-to-date at all times, and of applying an equitable and just interpretation of these facts in order to be able to justify its salary and wage administration policies to its employees as well as to its owners. A scientific approach to the systematic solution of wage and salary problems will go a long way toward the establishment of better industrial relations.

CONSUMER RATIONING TECHNIQUES

GORDON TAYLOR, B.A.

Awarded a Social Science Research Council Fellowship (New York) 1942. Carrying on research under the jurisdiction of Royal Institute of International Affairs, Chatham House, London, England. A graduate of the University of Western Ontario.

* * *

INTRODUCTION

IN times of peace, in a free market, spontaneous price variations automatically ration goods in short supply. In wartime, shortages are more numerous and more severe than in times of peace and price is no longer an efficient or just rationer. Some other distributive device must therefore be used. Prices must be held down and administrative rationing techniques must be applied. Price fixing alone is no solution. If prices are fixed in order to prevent price increases, then the demand for the good or goods in question will exceed the supply of those goods at the fixed price. Under such circumstances the goods in short supply would be distributed "on the basis of accident, early inquiry or favoritism".[1] Ability to take advantage of these factors is the result of caprice rather than merit or need. Allocation based on such criteria is both unjust and chaotic. It results in queues, irritation and sometimes malnutrition—to say nothing of profiteering.

If rationing is necessary, then what rationing techniques can be used and under what circumstances should the various techniques be employed? *In this article I shall discuss, primarily, formal methods of rationing economic goods to consumers.* Because they are of minor importance in an economy organized for total war, voluntary and indirect rationing will meet with rather summary treatment. I shall not discuss rationing of expenditure[2] nor shall I discuss differential rationing and the distribution of surpluses.

INDIRECT RATIONING

In a nation that has already maximized its war effort and has already reduced civilian consumption to an "iron ration"—or as close to it as practicable, rationing will appear in various forms, depending on the nature of the shortage under consideration and the character of the commodity to be rationed. Whether coupon rationing or an equally drastic system should be applied to the goods in short supply depends on a weighing of the expected cost of coupon rationing against the advantages anticipated from its application. Both of these factors vary

[1] A. C. Pigou, *The Political Economy of War* (New York: The MacMillan Company, 1941), p. 145.

[2] *i.e.*, the limiting of individual expenditure on consumers' goods as a whole.

according to the specific article in question. Generally speaking, if the article is "a necessity", coupon rationing is the most efficient solution. This is usually supplemented, however, by other less drastic measures.[3] In the economy postulated, these latter measures are impotent by themselves, and in practise have proved to be so. Either they are not inherently capable of equitably and evenly eking out supplies or they are unenforcible. They may, however, pass muster in the case of the less essential commodities that defy more formal rationing. They may also be used to handle temporary shortages and in the early phases of the transition to total war economy, as a stop-gap preliminary to more drastic rationing. Some of these "other" or less drastic methods will be discussed briefly.

Rationing among regions or stores, public appeals, restrictions on the sale and use of certain articles, and rules regarding the sale and use of less popular substitutes are all types of indirect rationing. The number of variations possible within these broad classifications is almost endless. I have space to discuss only four of the more important schemes—and these only briefly.

Rationing on the wholesale or regional level is no alternative to direct consumer rationing. Alone,[4] it does not insure fair distribution between consumers and tends to produce "a certain amount of wasteful expenditure by leading people to buy, *faute de mieux*, things which are not the best, or even the most economical for their purposes".[5] Some such system of allocation, however, should be used as a supplement to direct rationing in order to insure equal effective rations between regions and localities. Voluntary rationing by public appeals may, in many instances, be worse than useless, particularly if the commodity under consideration can be hoarded. Under this circumstance, a public appeal may merely call attention to potential or existing shortages, thereby intensifying them.[6] Restricting hours of sale is often little better than public appeals if purchases can be bunched in the unrestricted hours (Canada tried this scheme in respect to gasoline). In February, 1918, the American Government prohibited the sale of wheat flour to consumers and to public eating places unless accompanied by the sale of an equal quantity of substitutes such as corn or rice flour. Such "fifty-fifty" rules result in a waste of substitutes.

[3]For instance, sometimes a government prohibits the eating or sale of certain foods on certain days or in certain combinations.

[4]As used for the distribution of sugar, flour and mill feeds in the United States during the last war.

[5]*The Economist*, December 21, 1940; p. 759.

[6]See: Emanuel Stein and Jules Backman (editors), *War Economics* (New York: Farrar and Rinehart, Inc., 1942), p. 208.

Some Rationing Techniques[7]

Since the maximization of the war effort requires the most complete reduction of civilian consumption practicable, *need* is theoretically the ideal distributive criterion. If after the more basic needs of different individuals have been satisfied, a surplus exists, it may be distributed according to other criteria. Perhaps one of these criteria might be the maximization of incentive by means of differential real income. Another might be flexibility. In any case, the more intense is the war effort the more acute are shortages, and the more closely must the distributive process fit the various and varying needs of the people. For instance, in Germany, where shoes and boots are extremely scarce, a person must prove his need before he can obtain a new pair. In England, where they are relatively more abundant, shoes and boots are included in the clothing "points" system.

Sometimes objective criteria of need can be found. The allocation of coal according to both the number of rooms and the number of occupants of a house is an example.[8] For durable and semi-durable goods, however, the only way to determine need is direct examination of each would-be consumer before purchase is permitted. This method requires the issuance of *purchase certificates or permits*. This is true of tire distribution in Canada and the United States. The use of purchase certificates has been extended in Germany to such things as bed linen, tablecloths, overcoats and shoes. In many cases need can be tested by the exhibition of the worn-out article to be replaced. (In Germany old overcoats must be turned in before a new one can be obtained.) Because the "needs test" lacks objectivity and simplicity, its administrative and political disadvantages usually outweigh its inherent merits. Articles like furniture and refrigerators, however, that are infrequently replaced are difficult to apportion equitably in any other manner. While some people may be able to get along without new refrigerators or furniture during the war period, others may suffer unless they are available—particularly such people as newly-weds or those who have been bombed out. As in the case of gas rationing in Canada and the Eastern American States, need is sometimes met by *a supplement to the basic ration.*

In practise, if distribution is to match needs closely the habits and lives of each individual have to be minutely scrutinized. This is usually

[7]For a good discussion of some of these techniques see J. Henry Richardson, *The Canadian Journal of Economics and Political Science*, Toronto, February 1942. Most of the techniques discussed below are concerned with coupon rationing. Many of them apply equally well to informal or voluntary schemes.

[8]In his recent report for the British Government, Sir William Beveridge has recommended that in the future coal be rationed on this basis. *The Economist* refers to this proposal as "intelligent and equitable".

both administratively and politically impossible. It is then necessary to resort to distributive techniques that only approximate need but at the same time combine simplicity and administrative convenience. For goods of homogeneous quality which are continuously consumed in more or less equal amounts by all people, such as sugar, this technique is relatively simple. The solution lies in dividing the available supply by the number of consumers and allotting each of the latter an equal portion of the available stock. This might be called *equal quantity rationing*. Its application is frequently confined to the common denominators of diet.

Where large and numerous variations in quality or consumer preference exist among single commodities or related groups of commodities, as in the case of meats, the best system of rationing is often some type of *equal value rationing*. Like other rationing schemes, however, value rationing to be effective must be accompanied by price control. This method is used in Great Britain for the rationing of meat. If prices are free to move, because of the ceiling on meat expenditures the remand for higher priced meats will fall off, and their prices will correspondingly decline. This discriminates against the poor by raising the price of inexpensive meats and by permitting the rich to get their meat more cheaply.[9] Price-fixing will not alone solve this problem because unless the fixed price is below the "competitive price" there will be surplus stocks of higher quality (*i.e.*, higher priced) meats. Partially to relieve these problems England has found it necessary to exempt very expensive offals and manufactured meats.

Some types of rationing are theoretically preferable to others, yet frequently, because of the nature of certain commodities and the presence of exigencies, it is advisable to adopt less preferable ones. *Rationing based on quantities previously consumed* is one of these. As quantities consumed in the past have little direct relation to need, this scheme is certainly unsuited to handle serious shortages, nor is it in harmony with the maximization of war effort by means of the use of an "iron ration". Not only is this true, but such a system also discriminates against those who are already patriotically skimping. It has been used for the distribution of coal in the United Kingdom but is now on the way out.[10] Because of the law of averages this rationing technique is less objectionable if used on a regional or wholesale level.[11]

[9]On this subject *The Economist* says: "Even within the range of what is administratively practicable, it should be possible to avoid this curious result by some combination of rationing by weight with rationing by value." (Feb. 10, 1940.)

[10]See "Some Rationing Techniques"[7] of this article.

[11]In Great Britain it seems to be the usual method of allocating food to restaurants and canteens.

When several related commodities are substitutes for each other it is often best to use some type of *group rationing*. Sometimes the group is treated as if it were one commodity. Thus in Great Britain the total weekly ration of any combination of butter, margarine, and cooking fats is eight ounces.[12] If any one of these goods becomes particularly scarce its proportion of the total ration may be limited.

When it is desirable to limit the total consumption of any group of commodities and yet allow freedom of choice between items, *the "points" system of rationing* may most feasibly match the distributive process to needs. This will only be true, however, if the articles in the group are replaced at fairly regular and frequent intervals. This method has been applied to clothing, first in Germany, then in Great Britain. Some very essential cloths and clothing, the consumption of which varies radically between different individuals, may be assigned fewer points or entirely exempted. For instance, in Great Britain blackout cloth is exempted and overalls to be used by laborers are charged an almost nominal number of points. Because a child's habit of changing dimensions rather rapidly and continuously is considered desirable, fewer points are assigned to children's clothing. Indeed, clothes for children under four are exempted because of their rapid obsolescence.

Because the "points" system restricts total quantity rather than total value, demand will tend to shift to high quality goods. To counteract this, more points may be assigned these articles. Thus in Germany a woman's woollen dress is the equivalent of 26 "points", a rayon dress only 10.[13]

The popularity of the "points" method is ever increasing. In Great Britain it is gradually being extended to include more and more goods. In December, 1941, canned goods were brought under a "points" rationing scheme. Since then, dried fruits and the majority of cereals and pulses (as of January 26), condensed milk and cereal breakfast foods (as of April 6) have been added, raising the total number of points from 16 to 24. Several factors are responsible for this growth. One of the most important is the fact that introduction of this system has restored competition in the retail trades.[14] Another reason is that it eases the inflationary strain on the prices of the goods included without drastically reducing the range and freedom of consumer's choice.

These virtures are obtained only at a price. The very flexibility

[12]Rather, it was 8 ounces. Actually, it varies from time to time.
[13]Economic Intelligence Service, *World Economic Survey 1939/41* (Geneva: League of Nations, 1941), p. 67.
[14]This will be discussed more thoroughly later.

of the system opens the door to evasion. The exemption or favoring of some types of clothing often results in a perversion of use. In Great Britain, for instance, when the purchase of workmen's overalls was unrestricted, a fashionable women's shop in London began selling elegant variations of them without requiring coupons. Blackout cloth and bed linen (unrestricted) can be altered and used for dresses. Another difficulty arises from the fact that the weights assigned the various commodities must be so nicely adjusted "as to bring the final combination of purchases into relation with supplies on the market".[15] This latter problem is not so serious for durable goods as it is for perishable commodities. In the latter case not only must there be no shortage but surpluses must also be minimized.

"Registration" (as in Great Britain) and "Customers' lists" (as in Germany) are similar rationing techniques which may be used alone or in connection with coupon rationing. Used by themselves, these techniques are not adapted to the handling of extreme shortages but are frequently used as preliminary expedients. Eggs and onions (formerly milk as well) are distributed by this means in Great Britain. In Germany customers' lists are used for such things as fish, poultry and game. In Great Britain a consumer may register at a different shop for each commodity so rationed. This stimulates efficiency but has a serious disadvantage as well, since it enables a consumer to spread his patronage among many stores and so increase his chances of receiving unrationed spoils. This is obviously indiscriminatory. To prevent just this, the British Food Ministry in the summer of 1941 required registration at one shop for all fats (*i.e.*, butter, margarine and cooking fat). In Germany, each customer's name is on only one list and he therefore receives all goods so rationed from only one shop. Supplies received by retailers may be distributed among customers on an alphabetical basis or by lot. Registration for goods that are not more formally rationed prevents those consumers who are able and willing to spend the time and money from getting a share of the short supplies of many stores, increasing their own consumption at the expense of others who cannot find time to go from store to store. Registration, alone or in conjunction with coupon rationing, provides a basis (*i.e.*, the base ration times the number of registrants) for reasonably equitable distribution between regions and retail outlets. In order to concentrate trade and simplify the distribution of goods among retailers, in the summer of 1941, supplies of a rationed commodity were withdrawn from any British retailer who was not able to secure 25 registrations for the

[15] *The Economist*, December 28, 1940, p. 789.

article. *The Economist* suggests that this might prove to be a costly cure if it stimulated retailers to canvass for customers.[16]

Tying customers to retailers by means of registration, while advantageous in many respects, in practise leads to apathetic and inefficient retailing. "The shopper has to pamper to the shopkeeper or her attention may not be drawn, say, to the shop's new quota of crackers, just in."[17] This was indeed becoming a serious problem in the United Kingdom before the extension of the "points" system. By allowing freedom of choice between items and stores and by increasing the customer's independence this extension went a long way toward restoring competition in the grocery trade. As a result, many retailers now try to attract customers by lowering prices below the official maximum.[18]

Concluding Remarks

Unfortunately, the technique of rationing ordains that distribution be governed largely by general rules. In so far as freedom of consumer choice is compatible with these rules it is desirable.[19] Consequently, *ceteris paribus*, group and "points" rationing schemes are superior to the rationing of commodities individually. Administrative rationing devices and the inelasticity they produce can be completely avoided in a few cases if individual prices are fixed, and if at that price the good or goods in question are supplied in unlimited quantities. This is true of bread distribution in Great Britain. Such a scheme not only expedites the distribution of the good itself, but, by acting as a buffer to actual hunger, it reduces the rationing authorities' duties to insuring equitable distribution, variety, and vitamin content. Obvously, such a technique can be employed only in isolated and rare instances.

All rationing problems are, of course, multiplied in intensity if income available for civilian consumption is not matched to the flow of civilian goods. Successful rationing and a drastic fiscal policy are like Siamese twins; a happy marriage to one involves life with both. The truth of this statement will become more and more obvious to Canadians as stocks are depleted and as more numerous and intensive shortages develop.

[16] July 12, 1941, p. 43. I do not know how this has worked out in practise.

[17] "Shopping in Wartime Britain", *Bulletins from Britain*, No. 75, February 4, 1942, p. 12.

[18] See: *The Economist*, December 13, 1941, p. 716.

[19] Freedom of consumer choice is particularly desirable in wartime since, if civilian consumption is to be drastically curtailed, it is very important to maximize the satisfaction received from any given volume of consumers' goods.

BOOK REVIEWS

TRUTH IN ACCOUNTING

KENNETH MACNEAL, C.P.A.
University of Pennsylvania Press, 1939. $3.50.

Since the fifteenth century business enterprise has passed through three main eras. The first was the simple trading venture and bookkeeping was used only to find out the amount of profit resulting from each venture. The second began later when the charging of interest by Christians was legalized in England in 1839. The money-lenders insisted upon statements of net worth and earnings of their clients by independent accountants. It was at this time that the profession of public accountant was born.

At this time large businesses were still owned by one or at the most four or five persons. Therefore, the only people interested in the statements drawn up were the owner and the creditor. The creditor was interested only in knowing that the net worth and profits were as much as stated so that business men who knew their own profits began the practise of understating profits and net worth to give them better standing with creditors. Understatement harmed no one and yet gave safety to the creditors. From this grew the attitude of accountants that their sole duty was to prevent overstatement.

Soon, however, business entered its third era. Ownership changed from a few people to hundreds of stockholders. Shares were sold on the open market so that the ownership of a business changed hands. The management of a business was entrusted to a board of directors so that now the old owner-manager relationship has ended. "Today the most important party at interest in modern business is the small uninformed security holder who virtually did not exist when the present principles of accounting originated." It is the job of the present day accountant to prepare and present statements which will protect these security holders by presenting clearly the correct values in the balance sheet and the correct profit in the income sheet.

It is from this viewpoint that Mr. Kenneth MacNeal is working when he maintains that unless the present accounting principles be revised to fit this new condition the profession of accounting will fall into disrepute and eventually die out. Present principles allow dishonest management to swindle the uninformed security holder and prevent honest management from giving a true picture of his position.

Mr. MacNeal attacks chiefly three principles of accounting. They are: that inventories should be valued at cost or market whichever is lower; that fixed assets should be valued at original cost; and that all unrealized losses should be considered but unrealized profits should not be shown in the profit and loss statement. To protect the security holder he argues that inventories should be valued at market price; that fixed assets should be valued at market price if possible but if not at replacement cost; that unrealized profits should be considered the same as unrealized losses.

The whole book is a battleground on which the present principles fight against these revolutionary principles of Mr. MacNeal and in the end the reader must admit that the accounting practise of today comes off a sorry second best. He successfully explodes the "going-concern" theory of values upon which much of present accounting depends and shows where the valuation of fixed assets at original costs can cause some amusing situations. The whole purpose of the book is to awaken accountants to the realization that all is not well in their profession and that unless something is done in the near future, accounting as a profession will become non-existant.

The author himself realizes that the book is like a voice crying in the wilderness. It is, however, well worth the while of every student of accounting and every business man to read this well written book and to give deep thought to the points brought forward by the writer.

FRED NORWOOD

COST ACCOUNTING FOR WAR PRODUCTION

W. B. LAWRENCE, C.P.A.

(Prentice-Hall, Inc.)

The author clearly sets out his purpose in the opening paragraph—"This text is designed for men and women requiring practical training in cost accounting in the shortest possible time consistent with a thorough and comprehensive treatment of the subject. Every effort has been made to concentrate on the 'how', 'what', and 'why', with theoretical discussions kept to a minimum."

The first two chapters are devoted to an outline of the fundamentals of cost accounting, account classification and subsidiary records. Reference is made to such special wartime problems as governmental audit of cost plus contracts and the apportionment of costs between civilian and war production.

Eight chapters are devoted to specific or job order costing in which the author reviews the accounting for material, labour, and overhead. The treatment is principally the standard all-purpose procedure with no reference to peculiarities of or refinements possible in specific industries. Some of the common requirements of war contracts regarding valuation of materials and allocation of overhead are pointed out.

Two chapters deal with routine closing entries and financial statements. The remaining four chapters are devoted two to process accounting and two to standard costs. The treatment of these topics is standard.

The text contains some 75 problems, some of which are carried throughout the text. They are a better than average selection. Some are old problems in "battle dress" and others are new wartime problems.

Treasury Decision 5000 of August 1940 respecting excess profits on contracts for naval vessels and army and navy aircraft is printed as an appendix and the text is well referenced to it. This decision is only of academic interest to us in Canada, but it does help to bring out the demands war contracts put on cost accounting.

The author seems to have attained his purpose. Expanded war plants could very advantageously use this book for introducing employees to the subject of cost accounting and then build upon it by instructing them in the company's particular cost accounting methods.

—EARLE RICHARDS.

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